

CLASS 100, PRESSES**SECTION I - CLASS DEFINITION**

This is the generic class for apparatus for subjecting material to compressive force by (a) causing solid surfaces to approach one another while the material is between them, (b) compelling the material to move through a constriction, or (c) by rendering a flexible member taut around the material. [For specific subclass references, see Subclass References to the Current Class, below.]

This class is the generic class for methods and apparatus for binding material with a flexible filament, strand or band.

This class includes methods in which material is pressed to compact it to a smaller volume.

This class includes methods and apparatus for pressing a lid against a receptacle.

This class includes silos combined with means to compact ensilage within them. (See subclasses 65+).

This class includes presses with a duct or collector for liquid flowing from the material as a result of the pressing.

This class includes devices for removing from the material a cloth in which the material has been compacted.

This class (100) includes methods and apparatus for crushing hollow metal bodies such as tin cans, automobile bodies, etc. Disclosure of additional utility for bottle breaking is also included here (Class 100) while bottle breaking, per se, is in the class for solid Material Comminution or Disintegration. See the Search Class Notes below.

This class includes devices for subjecting previously associated articles to compressive force to cause them to be bonded together where no associating means is claimed.

EXPLANATORY NOTE ON SCOPE OF CLASS

Presses are employed in many arts and are classified generally according to the art to which they pertain. For the locus of various arts, reference may be made to the Index to the Manual of Classification. In Lines With Other Classes, Combined Pressing Elsewhere Classified and Binding and Pressing Elsewhere Classified, hereof,

are listed arts in which pressing is common or in which subclasses have been established relating to it.

Class 100 has heretofore gathered presses relating to such arts as baling, bundling, copying, expressing liquids from solids, and packing. The art so gathered has been employed to establish this generic classification of presses.

Since it is not desirable to withhold from use those portions of the reclassification which can be completed and handled as a unit, the reclassification is established even though many inventions relating to the subject matter are represented herein only by search notes to other classifications.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

Class 100 is the generic class for apparatus for pressing particulate material. Class 264 is the generic class for corresponding methods; for the line between these classes see paragraphs under Lines With Other Classes and Within This Class of the class definition of Class 264.

COMBINED PRESSING ELSEWHERE CLASSIFIED

This class provides, in subclass 102, and in the various subclasses preceding it for pressing in combination with other features. Nearly all pressing elsewhere classified includes not only pressing, per se, but in combination with other devices or steps. Where other classes set out subclasses directed to combinations of pressing with other features, which combinations relate to those appearing in the Class 100 schedule, suitable cross search notes to the subclasses concerned have been made.

See References to Other Classes, below, referencing this section for classes that each include pressing and have a subclass directed to combined features generally, one of which may be pressing, or a specific combination of pressing with other features and not appearing in the Class 100 schedule or of special note.

BINDING AND PRESSING ELSEWHERE CLASSIFIED

Methods and apparatus are intermixed in the art as elsewhere classified and they are included together in References to Other Classes, referencing this section.

Plastic shaping. The shaping of material by molecular flow under pressure is generically in Class 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, and divided among other classes according to the nature of the material worked. Of these, Class 99, Foods and Beverages: Apparatus, and Class 426, Food or Edible Material: Processes, Compositions, and Products, are generic to food material, and Class 72, Metal Deforming, as to metal. Class 419, Powder Metallurgy Processes, for making articles from particulate material including metal particles. See the definitions of these classes for the distribution of related art.

The compaction of particulate material into a definite shape wherein at least some of the particles maintain their identity in the product is classified in Class 100 and Class 264. For the line, see the definitions to Class 264, particularly subclasses 109+.

PRODUCTS

See References to Other Classes, below, referencing this section.

PRESS SUBCOMBINATIONS

See References to Other Classes, below, referencing this section, for classes including subcombinations of special utility in presses. Class 100 includes press subcombinations not elsewhere provided for.

SECTION III - SUBCLASS REFERENCES TO THE CURRENT CLASS

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 1+, for methods and apparatus for binding material with a flexible filament, strand or band.
- 35+, for methods in which material is pressed to compact it to a smaller volume.
- 54+, for methods and apparatus for pressing a lid against a receptacle.
- 65+, for silos combined with means to compact ensilage within them.
- 104+, for presses with a duct or collector for liquid flowing from the material as a result of the pressing.
- 298, for devices for removing from the material a cloth in which the material has been compacted.

SECTION IV - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

- 8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, subclasses 137+, for methods of cleaning combined with pressing of textiles. (see Combined Pressing Elsewhere Classified, above)
- 12, Boot and Shoe Making, appropriate subclasses, for presses having a pressure surface conformed to fit or shape shoe parts such as sole blanks (subclass 21) sole laying and leveling (subclasses 33+), heels (subclass 48) and toe and heel stiffeners (subclasses 64+). Class 100 includes, in appropriate subclasses, presses compacting a stack of shoe soles together for binding. (See Binding And Pressing Elsewhere Classified, above.)
- 15, Brushing, Scrubbing, and General Cleaning, subclasses 260+, for mop wringers. (See Binding And Pressing Elsewhere Classified, above.)
- 15, Brushing, Scrubbing, and General Cleaning, subclasses 256.5+, for cleaning attachments to be applied to a device to remove material from a moving surface thereof in the normal operation of the device. (See Press Subcombinations, above.)
- 19, Textiles: Fiber Preparation, subclass 144.5, for apparatus or processes for manufacturing articles, other than bales or packages, comprising compressing, compacting or shaping fibers into a wad or plug. Class 100 includes, appropriate subclasses, the compacting of cotton, hay, etc., into bales. (See Binding And Pressing Elsewhere Classified, above.)
- 24, Buckles, Buttons, Clasps, etc., subclasses 16+, for binder chains, cords or wires, per se, or in combination with an attached binder tightener. See Class 100, subclass 1, (2) Note, for the line. (See Binding And Pressing Elsewhere Classified, above.)
- 28, Textiles: Manufacturing, appropriate subclasses, as the generic class for the production of structures by the mechanical interengagement of fibers and strands. Class 100 includes, appropriate subclasses, the compacting of cotton, hay, etc., into bales. (See Binding And Pressing Elsewhere Classified, above.)
- 29, Metal Working, subclasses 33+ for combined machines employed in metal working, and subclasses 400.1+, for manufacturing processes generically. (see Combined Pressing Elsewhere Classified, above)

- 29, Metal Working, subclasses 4.51+, for devices for shaping metal wool packages, subclasses 33+, for combined operation metal working apparatus, one of which operations may be pressing, subclasses 90.01+, as generic for machines and processes of condensing, smoothing, compacting, or polishing the surface of metallic or nonmetallic articles usually by rubbing with a smooth surface of greater hardness than that of the article being operated upon, subclasses 400.1+, as the generic locus for processes of manufacturing, and subclasses 700+, as the generic locus for apparatus for assembling and disassembling. (See Binding And Pressing Elsewhere Classified,above.)
- 34, Drying and Gas or Vapor Contact With Solids, subclass 90, for drying apparatus with additional features. See the Class Definition of Class 34 for the line where heating and pressing are employed. (see Combined Pressing Elsewhere Classified, above)
- 34, Drying and Gas or Vapor Contact With Solids, appropriate subclasses, for devices for expressing liquids from solids for drying, particularly subclasses 143+, for the stationary press type. Class 34 includes also expressing of liquids from solids for other purposes than drying where there is drying of the solids other than by heating necessary for expressing. Class 34 includes also the denuding of fluent solids. (See Binding And Pressing Elsewhere Classified,above.)
- 37, Excavating, subclasses 225+, for devices for excavating snow and compressing it. (See Binding And Pressing Elsewhere Classified,above.)
- 38, Textiles: Ironing or Smoothing, subclasses 1+, for smoothing machines, subclasses 69+, for smoothing machines, subclasses 69+, for smoothing implements, and subclass 144, for textile pressing or smoothing processes. (See Binding And Pressing Elsewhere Classified,above.)
- 38, Textiles: Ironing or Smoothing, subclasses 2+, for ironing machines with combined features, subclasses 75+, for flat irons with combined features. (see Combined Pressing Elsewhere Classified, above)
- 44, Fuel and Related Compositions, subclass 635 for artificial fuel briquetting apparatus including plural operations, and subclass 631 for peat briquetting apparatus including plural operations. (see Combined Pressing Elsewhere Classified, above)
- 44, Fuel and Related Compositions, subclasses 634+ for apparatus for briquetting fuels, and subclasses 630+ for apparatus for briquetting peat. (See Binding And Pressing Elsewhere Classified,above.)
- 51, Abrasive Tool Making Process, Material, or Composition, for a process of making an abrasive tool which may involve pressing the material. (See Binding And Pressing Elsewhere Classified, above.)
- 53, Package Making, subclasses 436+ and 523+, for methods of and apparatus for, respectively, compacting material combined with a packaging operation including the application of a cover to a bale, and subclass 138.1, for the application of a cover combined with applying a binding. An exception is that Class 100, in subclasses 54+, takes devices for pressing lids on mercantile containers and in which the contents may be compacted by such compression. In general, where pressing only is involved, classification is in appropriate subclasses of Class 100 even if the press box is a portable receptacle. (See Lines With Other Classes, Combined Pressing Elsewhere Classified, for additional information.)
- 53, Package Making, subclasses 396+, for methods of banding material to make a package, subclasses 436+, for methods involving compacting material and packaging it, subclasses 523+, for apparatus for compressing material into bales and covering the compressed material, subclasses 582+, for apparatus for forming band type packages, and subclasses 387+, for package flap or seam holders for adhesive setting. See the Class Definition of Class 53 and the notes thereto for the locus of art on packaging and binding. Class 100 includes in subclasses 1+ compressing material and binding it in a flexible filament strand or band while Class 53 includes in subclasses 124+ compressing material and covering it with flexible sheet material with or without additionally binding of the covered material. (See Binding And Pressing Elsewhere Classified,above.)
- 56, Harvesters, appropriate subclasses, particularly subclass 341, for devices which gather material from the ground and then compact and bind the material gathered, subclasses 401+, for shockers, and subclasses 432+, for compressing and binding devices. (See Binding And Pressing Elsewhere Classified,above.)

- 56, Harvesters, appropriate subclasses, particularly subclasses 341+ for presses in combination with means to gather from the ground the material to be pressed. (see Combined Pressing Elsewhere Classified, above)
- 59, Chain, Staple, and Horseshoe Making, appropriate subclasses, for forging or welding presses for making the articles indicated in the class title. (See Binding And Pressing Elsewhere Classified, above.)
- 59, Chain, Staple, and Horseshoe Making, subclasses 16+, for combined machines for chain making, and subclasses 37+, for combined machines for horseshoe making. (see Combined Pressing Elsewhere Classified, above)
- 60, Power Plants, appropriate subclasses, for power plants as defined in definitions of that class and including nominally recited press elements as the loads thereof. Combinations of such power plants with significant press structure or press relationships are classified in appropriate subclasses of Class 100. (See Press Subcombinations, above.)
- 62, Refrigeration, subclass 66, 322, 601+, and 604, for processes and apparatus for manufacturing a solidified gas or liquid and shaping it. (See Binding And Pressing Elsewhere Classified, above.)
- 65, Glass Manufacturing, appropriate subclasses for a process of, or apparatus for manufacturing glass stock including a pressing step or means, especially subclasses 305+, for a press molding machine; see the "Search Notes" thereunder. (see Combined Pressing Elsewhere Classified, above)
- 65, Glass Manufacturing, appropriate subclasses, for molding of glass by pressing. (See Binding And Pressing Elsewhere Classified, above.)
- 68, Textiles: Fluid Treating Apparatus, subclasses 94+, for apparatus for squeezing textiles while subjected to a liquid, and subclasses 241+, for wringers for removing the liquid from textiles. (See Binding And Pressing Elsewhere Classified, above.)
- 68, Textiles: Fluid Treating Apparatus, subclasses 28+, for combined operations machines. (see Combined Pressing Elsewhere Classified, above)
- 69, Leather Manufactures, subclass 1, for leather hammering devices subclass 7, for seam pressers, subclass 8, for devices for forming and pressing leather articles, subclasses 21+, for processes of working leather involving pressure, and, subclass 48 for presses for working leather. (See Binding And Pressing Elsewhere Classified, above.)
- 71, Chemistry: Fertilizers, appropriate subclasses, for methods of producing and manufacturing fertilizers which may include pressing as a part of manufacturing. (See Binding And Pressing Elsewhere Classified, above.)
- 72, Metal Deforming, appropriate subclasses, for a means or a method for shaping plastic metal, e.g., by forging, rolling, bending, drawing or extruding it. See the definition of Class 72 for what constitutes "plastic metal". Shaping combined with cutting and/or heating or cooling to working or ambient temperature is included. (See Binding And Pressing Elsewhere Classified, above.)
- 72, Metal Deforming, appropriate subclasses, for a press combined with shaped dies (i.e., other than planar) for plastically die-shaping metal. (see Combined Pressing Elsewhere Classified, above)
- 74, Machine Element or Mechanism, appropriate subclasses, for power transmitting devices of general utility. (See Press Subcombinations, above.)
- 73, Measuring and Testing, subclass 78, for presses for hardness testing materials, and, subclasses 788+, particularly subclasses 818+, for presses for compression testing material. (See Binding And Pressing Elsewhere Classified, above.)
- 76, Metal Tools and Implements, Making, subclass 4, for test presses for use in die making, and, appropriate subclasses, for presses and dies for forging tools. (See Binding And Pressing Elsewhere Classified, above.)
- 81, Tools, subclasses 3.09+, for the combination of a press and receptacle closure remover. (See Binding And Pressing Elsewhere Classified, above.)
- 81, Tools, subclasses 3.09+, for combined press and receptacle closure remover. (see Combined Pressing Elsewhere Classified, above)
- 83, Cutting, subclasses 14+, for process of cutting combined with ancillary treatment of work; and appropriate subclasses relating to apparatus for clamping work in a cutting machine, e.g., subclasses 176, 282, 375+, and 452+. (see Combined Pressing Elsewhere Classified, above)

- 83, Cutting, appropriate subclasses for means relating to the clamping of work in a cutting machine, e.g., subclass 176, 282, 375+, and 452+. (See Binding And Pressing Elsewhere Classified,above.)
- 86, Ammunition and Explosive-Charge Making, appropriate subclasses, for ammunition and explosive charge-making including pressing. (See Binding And Pressing Elsewhere Classified, above.)
- 91, Motors: Expansible Chamber Type, appropriate subclasses, for expansible-chamber type motors or fluid motors of the type provided for in that class and including nominally recited press elements as the loads thereof. Combinations of such motors with significant press structure or press relationships are classified in appropriate subclasses of Class 100, and especially in subclasses 269+. (See Press Subcombinations, above.)
- 96, Gas Separation: Apparatus, for apparatus for gas separation with means to compact the separating media. See particularly subclass 137 and 149 for solid sorbent apparatus with means to compress or compact a solid sorbent bed. (See Binding And Pressing Elsewhere Classified,above.)
- 99, Foods and Beverages: Apparatus, for methods and apparatus for treating food which may include pressing, particularly subclasses 349+, for cooking devices with material pressing means, subclasses, 495+ for removing a fluid from food, and, subclasses 568+, for shell crackers. (See Binding And Pressing Elsewhere Classified,above.)
- 101, Printing, appropriate subclasses, for presses having means to produce characters or designs on surfaces by impression or by applying coating material. (See Binding And Pressing Elsewhere Classified, above.)
- 108, Horizontally Supported Planar Surfaces, subclasses 50.01+, for a horizontal planar surface member with combined features. (see Combined Pressing Elsewhere Classified, above)
- 117, Coating: Processes and Miscellaneous Products, subclass 65, for processes wherein a coating is subjected to a pressure treatment such as, for example, calendering. (see Combined Pressing Elsewhere Classified, above)
- 118, Coating Apparatus, subclasses 100+, for coating apparatus having a solid member or material acting on the coating after application. (see Combined Pressing Elsewhere Classified, above)
- 127, Sugar, Starch, and Carbohydrates, subclasses 18+, for the purging and molding of sugars. (see Combined Pressing Elsewhere Classified, above)
- 131, Tobacco, subclasses 28+ and 78+, for cigar and cigarette machines with combined features. (see Combined Pressing Elsewhere Classified, above)
- 131, Tobacco, subclasses 77+, for cigarette and cigar making machines including tobacco molding or forming devices, and, subclasses 111+, for apparatus for making plugs or compressed shapes of tobacco. (See Binding And Pressing Elsewhere Classified,above.)
- 141, Fluent Material Handling, With Receiver or Receiver Coacting Means, appropriate subclasses, for combinations involving means for filling receivers with fluent material including means to compact the material charge either prior to or after placement thereof into the receiver. In general, where pressing only is involved, classification is in appropriate subclasses of Class 100 even if the press box is a portable receptacle See also the discussion of Class 141 in (4) Note and (5) Note of subclass 229 of this class (100) and the Search Note of that subclass to Class 141. (See Binding And Pressing Elsewhere Classified,above.)
- 144, Woodworking. subclass 256.1 for woodworking bending presses, subclass 284 for a cork or bung press, and subclasses 329+ for processes or methods of working wood including compression, particularly subclasses 381+ for a Woodworking process. (See Binding And Pressing Elsewhere Classified,above.)
- 147, Coopering, subclass 4, for barrel compressors, subclass 6, for barrel headers for heading barrels during manufacture, and, subclasses 7-12, for barrel hoop drivers. (See Binding And Pressing Elsewhere Classified,above.)
- 148, Metal Treatment, subclass 131, for processes of heat treating metal combined with the application of a nondeforming pressure. (see Combined Pressing Elsewhere Classified, above)
- 148, Metal Treatment, appropriate subclasses, for processes which press metal and also heat-treat it. See particularly subclass 131 for processes of treating solid material involving a nonreshaping pressing operation. (See Binding And Pressing Elsewhere Classified,above.)

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses, for press structures peculiarly adapted to laminating functions and, especially subclasses 580+, for presses, per se, peculiar to laminating. Heating or cooling a press structure is provided for in Class 100 (subclasses 92+); also vacuum means to facilitate the pressing operation is provided for in Class 100 (subclass 90). (See Binding And Pressing Elsewhere Classified,above.)
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses, for laminating apparatus which may include a press. The patents in Class 156 recite some step or mechanism peculiar to laminating, such as adhesive applying, assembly or association of parts, shaping of at least one of the parts, etc. See also the note to 156 related to Binding And Pressing Elsewhere Classified that appears later in this section. (see Combined Pressing Elsewhere Classified, above)
- 162, Paper Making and Fiber Liberation, appropriate subclasses, for paper making operations that may involve a pressing step, and, especially subclass 56, for chemical processes involving squeezing or compression, subclasses 205+, for the subsequent pressure treatment of a formed web, subclasses 224+, for processes of treating an article by pressure, subclass 305, for the combination of molds for forming a paper article combined with pressing means, and subclasses 358+, for press and felt combinations. This class (100) provides for calenders, per se, when not combined with a felt for conveying the moist web. (See Binding And Pressing Elsewhere Classified,above.)
- 164, Metal Founding, subclasses 37+, for processes of compacting sand to form a metal casting mold and, subclasses 169+, for corresponding apparatus. (See Binding And Pressing Elsewhere Classified,above.)
- 165, Heat Exchange, subclasses 168+, for a heat exchange platen, per se. (See Press Subcombinations, above.)
- 173, Tool Driving Or Impacting, appropriate subclass, for subject matter directed to driving or impacting a tool, when such subject matter includes combined features peculiar to tool driving, but which does not include features limiting the subject matter to a specific tool art, such as specific shape of the work contacting portion of a tool, related tools, or an opposed work support. (See Press Subcombinations, above.)
- 192, Clutches and Power-Stop Control, subclasses 116.5+, for mechanisms usually automatic in operation for stopping a machine when a predetermined result is reached, when some part of the machine fails to function, or the material fails or is disarranged, when an operator's position renders him liable to injury. This subclass takes the subcombinations, per se. (See Press Subcombinations, above.)
- 193, Conveyors, Chutes, Skids, Guides, and Ways, appropriate subclasses, for chutes, per se, for carrying material as to a press box or between stages of a plural stage roll type press. (See Press Subcombinations, above.)
- 196, Mineral Oils: Apparatus, subclass 14.5, for apparatus for separating paraffin from oil by a filter press. (See Binding And Pressing Elsewhere Classified,above.)
- 198, Conveyors: Power-Driven, appropriate subclasses, as residual for power type conveyors or elements thereof, such as belts, per se.(See Press Subcombinations, above.)
- 206, Special Receptacle or Package, subclass 83.5, for bales and see the Notes thereto for compacted or bound articles elsewhere classified. (See Lines With Other Classes, Products, above.)
- 209, Classifying, Separating, and Assorting Solids, subclass 599 and 699, for devices which assort articles by determining their compressibility. (see Combined Pressing Elsewhere Classified, above)
- 209, Classifying, Separating, and Assorting Solids, appropriate subclasses, for separating devices such as separator belts, per se. (See Press Subcombinations, above.)
- 210, Liquid Purification or Separation, appropriate subclasses, for filters or devices in which material is pressed against a perforated surface by the pressure of fluid contacting the material. (See Binding And Pressing Elsewhere Classified, above.)
- 210, Liquid Purification or Separation, subclasses 400+, for belt type filters. (See Press Subcombinations, above.)
- 219, Electric Heating, subclasses 50+ for metal heating (e.g., resistance heating, etc.), especially subclasses 149+ for forging or shaping of the workpiece, subclasses 443.1+ for an exposed horizontal planar support surface for material to be heated (e.g., hot plate, etc.), sub-

- classes 600+ for inductive heating, subclasses 678+ for microwave heating, or subclasses 764+ for capacitive dielectric heating.
- 220, Receptacles, subclasses 578+ for an internal closure-like member which rests on the unused contents of a container. (See Binding And Pressing Elsewhere Classified,above.)
- 221, Article Dispensing, appropriate subclasses for article dispensers (feeders) not otherwise provided for, and see the class definition of Class 221 for a statement of the class lines and for the disposition of related disclosures of articles and strip feeding processes and apparatus. (See Press Subcombinations, above.)
- 221, Article Dispensing, appropriate subclasses, for article dispensing (feeding) devices which may be disclosed as feeding to press structure. (See Binding And Pressing Elsewhere Classified, above.)
- 222, Dispensing, for devices which operate to separate a quantity of material from a larger receptacle-enclosed mass of such material by the application of pressure upon the walls of the receptacle, as in subclasses 95+ and 214, in which the walls of collapsible and resilient wall containers, respectively, are pressed together by press-like structures in order to expel the contents of such containers. See Class 222 also for combinations involving devices so related to a source of material as to assist the discharge of such materials from the source. Where such discharge assistants serve only to forward the material through a discharge opening, classification is in Class 222 but where the further function of pressing a compressible material is accomplished as by forcing the compressible material through a restricted opening, or between pressing rolls, classification is in Class 100, subclasses 144+. See Class 222 also for dispensers, per se, disclosed as delivering material to or from a press. Where the press is claimed as an element of the combination other than as of a nominal source of supply for the dispenser, classification is in Class 100. (See Binding And Pressing Elsewhere Classified,above.)
- 223, Apparel Apparatus, subclasses 12+ for hat shaping presses, subclasses 28+ for apparel fluting presses, and subclasses 52+ for devices for pressing garments. (See Binding And Pressing Elsewhere Classified,above.)
- 227, Elongated-Member-Driving Apparatus, subclass 152, for apparatus for holding a lid on a receptacle combined with applying a member, e.g., nail, thereto. Class 100 includes, in subclasses 54+, presses for applying a lid to a receptacle combined with means to apply a member thereto. (See Binding And Pressing Elsewhere Classified,above.)
- 239, Fluid Sprinkling, Spraying, and Diffusing, appropriate subclasses, for apparatus for liquid distributors or discharges.(See Press Subcombinations, above.)
- 241, Solid Material Comminution or Disintegration, subclass 99 for bottle breaking, per se; appropriate subclasses for apparatus for disintegrating a solid mass into a number of smaller masses. See the Class 241 class definition, References to Other Classes, the Search Note to Class 100, for the line between Classes 100 and 241. (See Binding And Pressing Elsewhere Classified,above.)
- 249, Static Molds, appropriate subclasses, for molds intended for use with a press member for shaping a fluent material.(See Press Subcombinations, above.)
- 254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 199+, for portable implements or apparatus for tensioning flexible material (e.g., tightening cord around a box) from which the implement or apparatus is detached after tensioning. (See Press Subcombinations, above.)
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, appropriate subclasses, for molding and shaping processes within the class definition, particularly subclasses 109+, for processes of forming articles by uniting of bulk assembled discrete particles. (See Binding And Pressing Elsewhere Classified,above.)
- 267, Spring Devices, subclass 119 for a fluid spring press cushion; and subclass 130, for press cushion structure using a spring other than a fluid spring. (See Press Subcombinations, above.)
- 269, Work Holders, appropriate subclasses. Class 269 is the residual locus for patents to a device for clamping, supporting and/or holding an article (or articles) in position to be operated on or treated. See notes thereunder for other related loci. Particularly, see the class definition of Class 269, Lines With Other Classes, "Relationship to Press Means", for the line with respect to Class 100. (See Binding And Pressing Elsewhere Classified, above.)
- 289, Knots and Knot Tying, appropriate subclasses, for apparatus for and methods of intertwining portions of cords, ropes, or strips for the pur-

- pose of fastening them together. (See Press Subcombinations, above.)
- 292, Closure Fasteners, appropriate subclasses, for bolt elements and latching devices, not combined with lock structure for securing any closure element in closed or adjusted position. (See Press Subcombinations, above.)
- 297, Chairs and Seats, subclass 188.03, for trouser pressing attachment with a chair. (see Combined Pressing Elsewhere Classified, above)
- 324, Electricity: Measuring and Testing, appropriate subclasses, for apparatus for determining the electrical properties of material while under pressure including means to apply the pressure. (see Combined Pressing Elsewhere Classified, above)
- 366, Agitating, appropriate subclasses, for compacting material by merely shaking it. (See Binding And Pressing Elsewhere Classified, above.)
- 384, Bearings, appropriate subclasses for linear bearings. (See Press Subcombinations, above.)
- 396, Photography, subclasses 658+ for apparatus for burnishing or polishing a photographic image by applying to it heat and pressure or friction. (See Binding And Pressing Elsewhere Classified, above.)
- 399, Electrophotography, subclasses 222+ for development, particularly subclasses 279+ for a roller-type application member; subclass 318 for transfer by pressure; subclasses 320+ for fixing, particularly subclass 331 for pressure roller; subclass 357 for cleaning roller; and subclasses 361+ for document handling. (See Binding And Pressing Elsewhere Classified, above.)
- 400, Typewriting Machines, appropriate subclasses, for key operated machines for the production at will of printed matter generally, particularly, subclasses 127+, for machines for producing characters in relief or intaglio or entirely through the material. (See Binding And Pressing Elsewhere Classified, above.)
- 408, Cutting by Use of Rotating Axially Moving Tool, appropriate subclasses, for cutting by a tool that turns about an axis and moves along that axis toward a workpiece with no additional motion during operation. (see Combined Pressing Elsewhere Classified, above)
- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 72+, for drilling of that class type utilizing a drill press. (See Binding And Pressing Elsewhere Classified, above.)
- 412, Bookbinding: Process and Apparatus, appropriate subclasses, for presses combined with other book manufacturing apparatus. (see Combined Pressing Elsewhere Classified, above)
- 414, Material or Article Handling, subclass 467 (especially subclasses 501+ and 508+) and also subclass 679, in both of which areas a means for compressing material within a vehicle body may be included, in which the means for compressing the load functions (1) to fill or load the vehicle body, (2) move the material within the body for increasing the load capacity thereof, or (3) unload the vehicle body. However, compressing the material for the purpose of baling or forming a solid, compact, self-contained bundle is considered treatment of matter to change its shape or condition and so would go beyond Class 414 subject matter and cause classification in Class 100 even if associated with a vehicle. (See Binding And Pressing Elsewhere Classified, above.)
- 418, Rotary Expansible Chamber Devices, for rotary expansible chamber devices particularly adapted to compress elastic or compressible fluids. (See Binding And Pressing Elsewhere Classified, above.)
- 418, Rotary Expansible Chamber Devices, for rotary expansible chamber motors, per se, or with nominally recited press elements as the loads thereof. Combination of such motors with significant press structure or press relationships are classified in appropriate subclasses of Class 100 and especially subclasses 269+. (See Press Subcombinations, above.)
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for a reshaping means for nonmetallic materials, see subclasses 394+, for a preform reshaping apparatus, and subclasses 406+, for a press for shaping fluent material: see the search notes thereunder. (See Binding And Pressing Elsewhere Classified, above.)
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, for apparatus to shape or reshape non-metallic preform or powdered metal combined with perfecting features or operations not elsewhere provided for; see subclass 77 for an ultra high pressure generating device disclosed for use in changing or controlling chemical or physical properties of material (e.g., diamond maker, etc.). (see Combined Pressing Elsewhere Classified, above)
- 426, Food or Edible Material: Processes, Compositions, and Products, appropriate subclasses, especially 479+ for food working operations

- which may involve a pressing operation. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)
- 428, Stock Material or Miscellaneous Articles, subclass 546, for metallic stock material having metal particles. (see Combined Pressing Elsewhere Classified, above)
- 449, Bee Culture, subclasses 57+ for a press for setting honey comb foundation into a honey frame. Class 100 includes, in appropriate subclasses, a press for expressing honey from honey comb. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)
- 452, Butchering, subclasses 35+ for sausage stuffers, subclasses 46+ for sausage linkers, and subclasses 141+ for meat tenderizers. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)
- 452, Butchering, subclasses 35+ for sausage stuffers and subclasses 46+ for sausage linkers. (see Combined Pressing Elsewhere Classified, above)
- 470, Threaded, Headed Fastener, or Washer Making: Process and Apparatus, appropriate subclasses for metal forging presses for making the articles indicated in the class title. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)
- 470, Threaded, Headed Fastener, or Washer Making: Process and Apparatus, appropriate subclasses processes and apparatus in which pressing combined with other operations to produce the articles indicated in the class title except as provided for in Class 408. (see Combined Pressing Elsewhere Classified, above)
- 492, Roll or Roller, for a roll per se, not elsewhere provided for, and see the search notes thereunder. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)
- 493, Manufacturing Container or Tube From Paper; or Other Manufacturing From a Sheet or Web, subclasses 162+ for a paper box making press. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)
- 504, Plant Protecting and Regulating Compositions, appropriate subclasses for methods of producing and manufacturing substances regulating the action on plant growth which may

include pressing as a part of manufacturing. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)

- 554, Organic Compounds, subclasses 8+ for processes which include the recovery or extraction of fats from vegetable or animal substances or waste materials where there may be a broad inclusion of pressing or filtering; processes directed to a significant pressing or filtering may be in Class 100 or in Class 210 Liquid Separation or Purification. (See Lines With Other Classes, Binding And Pressing Elsewhere Classified, for additional information.)

SECTION V - GLOSSARY

BINDING

The disposing of a flexible filament, strand, or band taut and circumferentially closed about material.

MATERIAL

The solid substance subjected to compressive force or about which a binder is applied.

SUBCLASSES

- 1 This subclass is indented under the class definition. Methods and apparatus for use in disposing a flexible binder tightly and circumferentially closed around the material.
- (1) Note. The flexible binder is in the form of a filament, strand or band.
- (2) Note. Binder chains or wires or cords, per se, or with a binder tightener which stays with the binder member will be found in another class (for which see the Search Class Notes below) Where a tightening device is supported from the ground or from a material penetrating element and is claimed in combination with a cord, which the tightener tensions about the material the device will be found in this class, in another subclass (see the search This Class, Subclass notes below)

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 212, for presses in which the material is compressed within a bendable filament, strand or band by contracting it around the material by endwise pulling. See (2) Note above.

SEE OR SEARCH CLASS:

- 24, Buckles, Buttons, Clasps, etc., subclasses 16+, for binder chains or wires or cords, per se, or with a binder tightener which stays with the binder; see particularly subclass 18 for cords for binding. and subclass 19 for binder members with tighteners.
- 29, Metal Working, subclasses 243.57+ for a means not classified here or elsewhere, to assemble a metal strip over an edge of an article to form a binding or covering therefor.
- 53, Package Making, subclass 135 for combined packaging in sheet material and binding and subclasses 582+ for apparatus for applying band type covers. See the class definition of Class 53, for banding elsewhere classified.
- 56, Harvesters, subclass 22 for devices which have a motor for driving a portion of the apparatus and having means to cut, convey and bind grain, subclasses 131+, for harvesters which cut, convey and bind grain, subclasses 341+, for devices for raking hay, straw, and the like and securing it in a bundle, as by binding, subclasses 401+, for shock tying harvesters, and subclasses 432+ for devices for compressing and binding grain.
- 452, Butchering, subclass 48 for devices which wrap a binding member between successive portions of stuffed casing to form sausage links.

- 2 This subclass is indented under subclass 1. Methods .

- 3 This subclass is indented under subclass 2. Methods which include subjecting the material to compression other than and in addition to that due to the tightness of the flexible binder around the material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 35+, for methods of pressing material.

- 4 This subclass is indented under subclass 1. Apparatus having (1) means to detect a condition or change of condition and to cause, in response to the detected condition a control operation modifying the action of the apparatus or (2) means which when contacted by the material causes operation of means controlling performance of the apparatus or some part thereof.

- (1) Note. Automatic control here is of the binding operation and also other features where binding is involved.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 43, for automatic or material triggered control of pressing operations.

SEE OR SEARCH CLASS:

- 56, Harvesters, subclass 436 for compressing and binding devices of the cord knotter type in which the pressure of the grain trips the mechanism which carries the cord around the bundle.

- 5 This subclass is indented under subclass 1. Apparatus having, in addition to binding means, some means to bend the material into a coil or into layers.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 76+, for apparatus for pressing material including means to wind or fold a sheet, web or strand.

- 6 This subclass is indented under subclass 1. Apparatus having in addition to binding means, some means to cut or rupture the material into parts.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 39, for methods of pressing including cutting or comminuting.

- 94+, for presses having means for cutting, breaking, piercing or comminuting the material in addition to pressing.
- SEE OR SEARCH CLASS:
56, Harvesters, subclasses 131+ for harvesters having means to cut grain or the like, means for binding the grain into sheaves, and means for conveying the grain from the platform to the binder.
- 7 This subclass is indented under subclass 1. Apparatus having means for placing the material on or removing it from the means which supports the material for binding.
- (1) Note. Mere rollers affording support for the material during binding are not considered material depositing or discharging devices.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
215+, for reciprocating platen presses having means to place material on the means which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.
218, for reciprocating platen presses having means to remove the compacted material bodily from the means which supported the material during the pressing operation.
- SEE OR SEARCH CLASS:
56, Harvesters, subclass 449 for compressing and binding of the cord knoter type having ejectors or discharge gates.
- 8 This subclass is indented under subclass 1. Apparatus having means for placing a binder in position encircling the material.
- (1) Note. This subclass includes the species of binder applicators in which an article is set upon a portion of the binder and there are means to carry the binder around the rest of the circumference of the article.
- 9 This subclass is indented under subclass 8. Apparatus which places about the material a binder which is circumferentially closed and ringlike prior to such placement.
- (1) Note. The annular binders here applied include rubber bands.
- SEE OR SEARCH CLASS:
29, Metal Working, subclasses 235+ for other devices applying resilient annular members to articles.
- 10 This subclass is indented under subclass 8. Apparatus having means by which a portion of binder of the necessary or a desired length is severed from another binder portion and the cut off piece is subsequently bent around the material.
- 11 This subclass is indented under subclass 8. Apparatus in which the encircling binder member as completed on the material is made up of more than one flexible member with the ends of the several members joined together.
- (1) Note. The several sections of the binder as here placed are each flexible. This subclass does not include a single flexible element combined with a stiff buckle joining its ends.
- 12 This subclass is indented under subclass 8. Apparatus for placing a binder passing through the opening in ringlike material.
- (1) Note. Included here are devices for wrapping tape around the overlapping ends of a cable to make therefrom an annulus to serve as a tire bead core.
- SEE OR SEARCH CLASS:
29, Metal Working, subclass 241, for apparatus for assembling by a stringing action, either by stringing parts (which may be annular) on an attenuated or elongated means or by passing such means through a part or parts.
53, Package Making, subclass 409, for package making methods in which the package product is annular and covered and subclass 204, for apparatus

- for wrapping sheet material to form an annular package.
- 242, Winding, Tensioning, or Guiding, subclasses 434+ for apparatus for winding material upon a ring-shaped core.
- 13** This subclass is indented under subclass 8. Apparatus by which the binder is coiled about the material in a series of spaced convolutions.
- 14** This subclass is indented under subclass 8. Apparatus by which binding is placed a plurality of times around the material and the material is relocated relative to the binder applier between placements, so that the several turns are spaced along the material and/or extend in plural directions about the material.
- (1) Note. This subclass includes moving material so that the specific operation of binder applying is repeated at intervals spaced along the article.
- SEE OR SEARCH CLASS:
- 452, Butchering, subclass 48 for devices for indexing a tubular casing filled with sausage material and periodically wrapping twine about the casing and drawing the twine tight in order to form links.
- 15** This subclass is indented under subclass 8. Apparatus in which the surface of the material is moved past a source of binder supply by rotating the material with the binder being laid on the material as it rotates.
- 16** This subclass is indented under subclass 8. Apparatus in which there is a pivoted or oscillating jaw which forces the material toward another jaw and in so doing carries the binder with it around the material.
- (1) Note. This subclass includes a wool press, tables which have upwardly swinging hinged edge leaves which move the binder up along the sides of a fleece. For presses having such leaves but not including means to move the binders with them, search this class, subclass 232.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 232, See (1) Note above.
- 233+, for reciprocating platen press constructions in which the press has an oscillatory or hinged platen or piston.
- 17** This subclass is indented under subclass 8. Apparatus in which the binder is applied to the material by moving the material along a path which intersects a line between two points between which points the binder is stretched.
- 18** This subclass is indented under subclass 17. Apparatus having means by which the material is moved along the path across which the binder is stretched.
- (1) Note. In this subclass, for example, the binder is delivered to the joiner by the insertion of a separator or partition block.
- 19** This subclass is indented under subclass 18. Apparatus having a needle which carries the binder across the path of the material.
- (1) Note. This subclass includes devices in which the threader delivers within range of a supplementary binder mover which in turn delivers the binder to the range of movement of a joiner or of a gripper means.
- SEE OR SEARCH CLASS:
- 56, Harvesters, subclass 448 for compressing and binding devices of the cord knotter type having needle cleaners or guards for cleaning straw from the needle or binder-arm or for preventing the straw from becoming entangled with it, and subclass 453 for wire twister type compressing and binding devices in which there is a curved binder arm carrying wire around the bundle.
- 20** This subclass is indented under subclass 19. Apparatus in which the needle, in its movement across the path of movement of the material, carries the binder into the range of means which grips the end of the binder during the

- subsequent forwarding of the material for application of the binder.
- (1) Note. This subclass includes patents in which a threader delivers to a gripper but where there is no joiner, and in which the joining is done by hand.
- 21** This subclass is indented under subclass 20. Apparatus in which the movement of the needle to place the binder in the end gripper also places the binder in means which connects the ends of the binder to each other.
- 22** This subclass is indented under subclass 21. Apparatus in which the gripper rotates or pivots between positions in order to grip successive binder ends delivered to it.
- 23** This subclass is indented under subclass 20. Apparatus in which the needle delivers to a gripper and the gripper in turn shifts to carry the delivered end to means to connect the ends of the binder to each other.
- 24** This subclass is indented under subclass 19. Apparatus directed to needles, per se, for carrying the binder across the path along which the material is conveyed.
- 25** This subclass is indented under subclass 8. Apparatus in which there is a guideway curving relative to the material and the curve is such that the leading end of a binder thrust along the guideway is directed around the material.
- (1) Note. The guideway or channel contains and directs the binder rather than directing a puller for the binder.
- 26** This subclass is indented under subclass 25. Apparatus into which the guideway is of annular formation so that the material to which the binder is to be applied may be received within the opening of the annulus.
- 27** This subclass is indented under subclass 8. Apparatus in which the means for placing the binder includes an abutment over which the binder passes or to which the binder is secured, which abutment moves in a closed path circumferentially around the material to place the binder.
- 28** This subclass is indented under subclass 27. Apparatus in which the abutment, during successive circumferential travels about the material, goes in opposite directions.
- 29** This subclass is indented under subclass 1. Apparatus in which a binder encircling the material is tensioned to increase its tightness about the material and while so tensioned has spaced portions secured together.
- (1) Note. The joining in the patents classified in this subclass is often done by electric welding.
- SEE OR SEARCH CLASS:
- 53, Package Making, subclasses 138.6+ for apparatus for tightening and joining a flexible filament which serves as a bag closure string.
- 140, Wireworking, subclass 93.2 for binder tensioning and joining implements, i.e. manually or work supported devices.
- 219, Electric Heating, subclasses 86.1+ for spot welding by electricity.
- 30** This subclass is indented under subclass 29. Apparatus in which the means to secure together the spaced portions of the binder includes means to deform a sleeve, or a U-shaped clamp member within which the portions are received.
- SEE OR SEARCH CLASS:
- 56, Harvesters, subclasses 464+ for compressing and binding devices in which the ends of the cord are secured together by band or clip.
- 81, Tools, subclass 9.1 for seal applying tools which secure members together by means of the seal.
- 140, Wireworking, subclass 93.4 for implements which are manually or work supported and which tension and join the binder employing a clamp or clip, subclasses 150+ manually held or work supported implement for joining the ends of a band together and subclasses 111+ for apparatus for joining wires.

31 This subclass is indented under subclass 29. Apparatus in which the tensioning of the binder about the material involves the intertwisting of the local spaced portions of the binder, such twisting being employed for joining the binder portions together.

- (1) Note. Twisters often include a means to bend over a projecting twisted end so as to insert or tuck such end into or against the material to avoid a protruding point which might be dangerous in handling.

SEE OR SEARCH CLASS:

- 56, Harvesters, subclasses 451+ for grain compressing and binding devices of the wire twister type wherein the bundle is encircled by the wire and the ends of the wire are twisted together.
- 140, Wireworking, appropriate subclasses for wire twisting generally, and particularly subclass 93.6 for binder tightening and joining implements which are hand or work supported, and subclasses 118+ for twisting implements.

32 This subclass is indented under subclass 1. Apparatus by which a binder encircling the material is tensioned to increase its tightness about the material.

SEE OR SEARCH CLASS:

- 56, Harvesters, subclass 450 for compressing and binding devices of the cord knotter type having tension and take-up devices which tension the cord about the bundle.
- 140, Wireworking, subclass 123.6 for implements which combine tensioners and cutters for wire.
- 254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 199+ for portable implements or apparatus for tensioning flexible material (e.g., tightening cord around a box, from which the implement or apparatus is detached after the material is tensioned).

33 This subclass is indented under subclass 1. Apparatus for securing to one another spaced portions of a binder encircling the material.

SEE OR SEARCH CLASS:

- 289, Knots and Knot Tying, in appropriate subclasses for apparatus for and methods of intertwining portions of cords, ropes, or strips for the purpose of fastening them together.

34 This subclass is indented under subclass 1. Apparatus having means to support or grip the material and means to affix a binder detachably to such support or grip.

- (1) Note. This subclass includes platens having grooves containing means movable relative to the pressure surface of the platen for urging the binder from the groove toward the material. Reciprocating platen presses with straight access grooves permitting binder placement on the platen will be found in this class, subclasses 214+.
- (2) Note. This subclass includes tables with binder locating grooves where the grooves are narrower at the mouth than inwardly thereof.
- (3) Note. For material supports or clamps for holding the material while a wire is manually placed and then tightened and/or joined, see this class, subclasses 29+, 32 and 33.

35 This subclass is indented under the class definition. Methods .

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 2, for methods of applying a binder around the material.
- 3, for methods in which pressing is combined with the application of a binder to hold the material in compression.

SEE OR SEARCH CLASS:

- 8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, appropriate subclasses for processes employed for the purpose indicated by the class title and definition which processes may utilize mechanical pressure.

- 23, Chemistry: Physical Processes, subclasses 293+ for physical chemistry processes which processes may utilize the application of mechanical pressure.
- 34, Drying and Gas or Vapor Contact With Solids, subclasses 397+ for processes for the removal of liquids from solids mechanically, i.e., by operations other than by heating and/or gas or vapor contact.
- 38, Textiles: Ironing or Smoothing, subclass 144, for processes of smoothing or ironing of fabrics.
- 51, Abrasive Tool Making Process, Material, or Composition, for a process of making an abrasive tool which may involve pressing the material.
- 65, Glass Manufacturing, appropriate subclasses, especially subclasses 66+ for a process of forming glass in a mold cavity, e.g., by pressing.
- 69, Leather Manufactures, subclasses 21+ , for processes of working leather involving pressure.
- 71, Chemistry: Fertilizers, in appropriate subclasses, for methods of producing and manufacturing fertilizers which may include pressing.
- 72, Metal Deforming, for a process of plastically shaping metal.
- 83, Cutting, subclasses 13+ for methods of cutting.
- 144, Woodworking, subclasses 329+ for a process of working wood, such processes including compressing.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, for pressing processes disclosed for the purpose of laminating.
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, appropriate subclasses for methods within the class definition of molding or shaping, particularly subclasses 109+ for processes of forming articles by uniting discrete bulk assembled
- 419, Powder Metallurgy Processes, for processes for making articles from metal containing powders with or without sufficient heat to effect sintering.
- 426, Food or Edible Material: Processes, Compositions, and Products, appropriate subclasses, for food working operations which include among others a pressing operation.
- 427, Coating Processes, subclass 361 for processes wherein a coating is subjected to calendering.
- 504, Plant Protecting and Regulation Compositions, appropriate subclasses for methods of producing and manufacturing substances regulating the action on plant life which may include pressing.
- 36** This subclass is indented under subclass 35. Methods in which the material is surrounded on all sides by a woven or knitted member and the material subsequently subjected to compressive force while so surrounded.
- (1) Note. The cloth is here applied ordinarily as a filter. For commercial packaging, see search notes below.
- SEE OR SEARCH CLASS:
- 53, Package Making, appropriate subclasses, for commercial packaging,
- 37** This subclass is indented under subclass 35. Methods involving subjecting material to compression to cause the flow of liquid therefrom and the isolation of such liquid from the compressed mass.
- SEE OR SEARCH CLASS:
- 426, Food or Edible Material: Processes, Compositions, and Products, subclasses 478+, for processes of separating liquid from a food material by pressure.
- 38** This subclass is indented under subclass 35. Methods involving subjecting the material to a change in temperature.
- SEE OR SEARCH CLASS:
- 65, Glass Manufacturing, subclass 69 for a process of forming a hollow glass article in a mold cavity combined with the step of annealing or tempering.
- 72, Metal Deforming, appropriate subclasses, for a plastic metal shaping method including such heating or

- cooling as is required merely to maintain or establish a working or an ambient temperature.
- 148, Metal Treatment, appropriate subclass, for combined processes of pressing and heat treating metal.
- 419, Powder Metallurgy Processes, appropriate subclasses, for processes of making articles from particulate material containing metal particles including pressure with or without heat.
- 554, Organic Compounds, subclass 23 for processes directed to or including the melting out of fats, oils or waxes from animal or vegetable matter by heat, where no significant pressing is claimed.
- 39** This subclass is indented under subclass 35. Methods involving severing or breaking the material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 6, for apparatus for applying a binder and having means to sever the material bound.
- 94+, for presses having, additionally, means for cutting, breaking, piercing, or comminuting the material compacted.
- SEE OR SEARCH CLASS:
- 72, Metal Deforming, subclasses 324+ for plastic metal shaping combined with cutting, and see the notes thereunder for other subclasses.
- 426, Food or Edible Material: Processes, Compositions, and Products, appropriate subclasses, especially 478+ for process of separating edible material including the step of cracking, crushing, squeezing, twisting, or tearing.
- 40** This subclass is indented under subclass 35. Methods including bending the material into successive coils or layers.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 5, for apparatus for applying a binder and also having means for winding or folding the material bound.
- 76+, for apparatus for pressing material having, additionally, means for winding or folding the material compacted.
- SEE OR SEARCH CLASS:
- 148, Metal Treatment, appropriate subclasses, for processes which coil metal and also heat-treat it. See particularly subclasses 155+.
- 41** This subclass is indented under subclass 35. Methods in which the material is compressed by compelling it to pass through an opening of cross-section smaller than that of the uncompressed material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 144+, for presses which concurrently compress and convey the material.
- 42** This subclass is indented under subclass 35. Methods in which there are plural compression steps performed one after another and the direction of compression in one step is transverse to that of another step.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 232, for plural platen presses having three or more platens acting upon the same material with one or more platens acting in one direction to compact the material while it is compacted between the jaws of another pair of platens, in another direction.
- 43** This subclass is indented under the class definition. Apparatus having (1) means to detect a condition or change of condition and to cause, in response to the detected condition or change of condition, a control operation modifying the action of the apparatus, or (2) means which when contacted or moved by the material causes such a control operation.
- (1) Note. The condition sensed may be a condition of the material treated, of the treating means, or of the apparatus.
- (2) Note. Mere periodic, cyclic or sequential operation, that is, that in which the same series of operations in the material are repeated unchanged, in the absence of

adjustment of the machine, under a particular stimulus such as the presence of material or the application of power to the drive shaft is not considered automatic control.

- (3) Note. In this subclass, for example, are patents in which a condition is sensed during the operation of a press which conveys material while compressing it and in response to such sensed condition controls the size of an adjustable choke through which the material is conveyed by the press.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 4, for binder applying apparatus having automatic or material triggered control.
 99, for presses with an alarm, signal, indicator or press means which devices are not employed to control the press.
 353, for a press having two or more systems which perform distinct functions and wherein the operation of one part depends upon the correct positioning of the regulating element of another part.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclasses 6+, for a condition-responsive plastic metal shaping machine.
 131, Tobacco, subclasses 280+ for apparatus relating to the manufacture of cigars and cigarettes or like tobacco articles and in which there are means responsive to a condition to automatically control the operation of the cigarette or cigar apparatus or a part thereof.
 241, Solid Material Comminution or Disintegration, subclasses 33+ for comminutors with means to sense a condition which means causes operation of a control device.
 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 8+ for drilling machines having means to feed a tool relative to the work and having a control which initiates a change of speed or direction of tool movement in response to the sensing of a condi-

tion, or in response to the distance the tool has traveled from a datum position.

- 44 This subclass is indented under subclass 43. Apparatus in which the control is of means inserting a divider block between portions of material placed in the press one after another.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 180+, for concurrent pressing and conveying presses of the plunger type having means for inserting successive charge separators between material portions.

- 45 This subclass is indented under subclass 43. Apparatus in which the control is of the placing of material into the press, the addition of treating solids or fluids to the material, or the removal of material from the press.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 71+, for presses which additionally treat the material by adding a material treating substance to the material compacted.
 215+, for reciprocating platen presses having means to deposit material on the means which supports the material during compacting and see the notes thereto for other presses having material depositing means.
 218, for reciprocating platen presses having means to remove material from the surface which supported the material during the compacting operation and see the notes thereto for other presses having compacted material ejecting means.
 353, for a press having two or more systems which perform distinct functions and wherein the operation of one part depends upon the correct positioning of the regulating element of another part.

SEE OR SEARCH CLASS:

- 241, Solid Material Comminution or Disintegration, subclass 34 for comminutors with automatic control of the means feeding material to the comminuting zone.

- 46** This subclass is indented under subclass 43. Apparatus having means to detect differences in the travel of spaced portions of a movable platen and means to control the platen movement in response to detected differences so as to assure equal travel of all portions of the platen.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
258, for reciprocating platen presses having platen level compensating means.
- 47** This subclass is indented under subclass 43. Apparatus in which the control is of the spacing apart of opposed pressing rolls or of the rate of rotation of such rolls.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
168+, for roll type concurrent pressing and conveying presses having means to adjust the rolls.
- SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclass 253 for wringers in which the roll pressure applying or releasing mechanism and the means for driving the rolls are interconnected with one another to effect simultaneous adjustment in the units as one unit is adjusted such that roll separation effects a change in the drive mechanism.
241, Solid Material Comminution or Disintegration, subclass 37, for comminutors with automatic control of the spacing between cooperating comminuting surfaces.
- 48** This subclass is indented under subclass 43. Apparatus in which the control is of means which causes the platens or pressure surfaces to move relative to one another.
- SEE OR SEARCH CLASS:
241, Solid Material Comminution or Disintegration, subclass 36 for comminutors with automatic control of the comminutor driving means.
- 49** This subclass is indented under subclass 48. Apparatus in which means sensitive to the location of the material causes the actuating means to begin operation to cause movement of the platen or pressure surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
215+, for reciprocating platen presses having means to deposit material of the surface which supported the material during compacting.
- 50** This subclass is indented under subclass 48. Apparatus in which means sensitive to the pressure condition of the material as compacted controls the operation of the actuating means.
- 51** This subclass is indented under subclass 50. Apparatus in which the pressure upon the material causes the movement of the platen in the compacting direction to cease and hold position and there is means to maintain the platen in such compression position for a predetermined length of time.
- SEE OR SEARCH CLASS:
408, Cutting by Use of Rotating Axially Moving Tool, subclasses 8+ for drilling machines having feeding means and automatic control for the feed in which the control includes means to interrupt the relative approach of work and tool at a predetermined point or points, maintain the tool and work in set position while relative rotation of the work and tool continues and then reverse the direction of feed.
- 52** This subclass is indented under subclass 50. Apparatus in which the means sensitive to the pressure on the material causes the actuating means to reverse the direction of movement of the movable platen upon the achievement of a predetermined pressure in the material.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
256, for reciprocating platen presses in which the movement of the movable

- platen trips a stop or trips a trigger to cause the press to reverse.
- 260+, for reciprocating platen presses with actuation releasing for rebounding or biased return.
- 266, for reciprocating platen presses having a spring or weight return bias.
- 341 through 348, for a safety control system where the operation of the press is stopped and/or reversed when an abnormal condition is detected.

SEE OR SEARCH CLASS:

- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 8+ for drilling machines with feeding means and having automatic control such that on the occurrence of a predetermined condition during relative movement of the tool and work in the approach direction there is brought into operation a control means which reverses the direction of the relative movement of the tool and work to withdraw the tool from work.

- 54** This subclass is indented under the class definition. Apparatus in which the material pressed includes a mercantile container and a lid for the container and the compressive force urges the lid either against the container or against the contents of the container.

- (1) Note. This subclass includes apparatus for applying lids to preformed receptacles, the application of the lid effecting a compression of the contents.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 229, for reciprocating platen presses having nonuse displacement of the receptacle, the receptacle being that within which the material is compressed.

SEE OR SEARCH CLASS:

- 53, Package Making, subclasses 287+ for apparatus for applying separate closures to receptacles wherein the application of the closure does not act to compact the contents. See (1) Note, above.

- 147, Coopering, subclass 6 for machines which place the ends in a barrel during the manufacture of the barrel.
- 227, Elongated-Member-Driving Apparatus, subclass 152 for apparatus for holding a lid on a receptacle combined with means to drive a member, e.g., nail.
- 413, Sheet Metal Container Making, subclasses 43+ for presses for applying heads upon cans with or without subsequent seaming of the head to the can body.

- 55** This subclass is indented under subclass 54. Apparatus having means by which the container is transported to or from the support on which it rests during the pressing operation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 215+, for reciprocating platen presses having means for placing material on a support which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.
- 218, for reciprocating platen presses having means to remove material from the means which supported it during the pressing operation.

- 56** This subclass is indented under subclass 54. Apparatus having means which apply or manipulate means for securing the lid to the container while the compressive force continues.

SEE OR SEARCH CLASS:

- 227, Elongated-Member-Driving Apparatus, subclass 152 for apparatus for holding a lid on a receptacle combined with means to drive a member, e.g., nail.

- 57** This subclass is indented under subclass 54. Apparatus having means for pushing contents of the container within the locus of the movement of the lid during the pressing operation so that the compression forces the material into the container.

- 58** This subclass is indented under subclass 54. Apparatus having means positioning or holding the lid against movement transversely of the press during the compression operation.
- (1) Note. These devices are usually on the movable platen so that the lid may be applied thereto prior to movement thereof in the compacting direction so that the lid is carried by the platen against the box or the material therein.
- 59** This subclass is indented under subclass 54. Apparatus in which the movable platen and its actuating means may be secured to the container to which the lid is to be applied in such manner that the movable platen and its actuating means are carried by or supported by the container.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
227, for reciprocating platen presses in which the movable platen may be removed from the press and in which it is mountable on a portable receptacle.
- 60** This subclass is indented under subclass 54. Apparatus in which the application of compressive force includes lifting the container bodily upward.
- 61** This subclass is indented under subclass 54. Apparatus in which there are several platen areas each contacting the lid which are located at a distance from one another and which press against the lid at the same time.
- (1) Note. The separation of the platen areas is usually for the purpose of affording access for the application of securing means or for ease of manually loading the press.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
237, for reciprocating platen presses having plural movable platens moving in parallel paths toward a single opposing platen.
- 62** This subclass is indented under subclass 61. Apparatus in which the several pressing areas are bridge portions connecting the sides of U-shaped members while the container is between such sides.
- 63** This subclass is indented under subclass 61. Apparatus in which the spaced platen areas are on members which move toward one another prior to or during the pressing of the lid toward the receptacle support.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
226+, for reciprocating platen presses having platens which are capable of non-use displacement in a direction transverse to that of the pressing movement.
- 64** This subclass is indented under subclass 61. Apparatus in which the platen areas are on cantilever members which during the compressing operation move rectilinearly toward the support for the container.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
231, for reciprocating platen presses of the C-frame type.
- 65** This subclass is indented under the class definition. Apparatus acting within a storage chamber building to compact fodder material confined by the floor and walls of the building.
- (1) Note. The devices in this and the subclasses indented hereunder are usually employed while the silo is being filled and thus act to compact successively added increments of material against the mass already compacted within the silo. As the silo thus fills, the compacter acts always on the top of the material as it rises within the silo. This requires that the compacter be so connected to its actuator means that the operation is continuous despite the changing level.
- (2) Note. The storage chamber is usually round in cross section. This permits the use of a compacter moving circularly about an axis normal to such cross sec-

tion and having a uniform radius of action. Furthermore, the round wall presents a continuous surface which may be used to guide such a circularly moving compacter.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 83, for presses which circularly deposit a sheet, web, or strand through an eccentrically positioned hole upon a receiver, and there is a pressure roll at or along the hole.
- 100, for presses with ground traversing wheels or guides.
- 221+, for reciprocating platen presses in which a single support is indexed to bring various portions of a material successively under a reciprocating platen or tamper.

- 66** This subclass is indented under subclass 65. Apparatus having means for placing material within the silo or means for relocating the material within the silo after it has been so placed.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 215+, for reciprocating platen presses with means to deposit the material on the means which supports the material during the pressing operation.

- 67** This subclass is indented under subclass 65. Apparatus in which the compacting pressure surface has rolling motion relative to the material and its movement over the material is directed by the silo wall.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 210, for presses in which the compression is between the surfaces of a platen and a pressure roll.
- 245, for box and piston type reciprocating platen presses in which the piston is guided by a box wall.

- 68** This subclass is indented under subclass 65. Apparatus in which the compacting pressure surface has rolling motion relative to the material and its movements are directed by a vertical post extending centrally of the silo.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 210, for presses in which the compression is between the surfaces of a platen and a pressure roll.

- 69** This subclass is indented under subclass 65. Apparatus in which the compacting member is a reciprocating element hanging on a flexible member supported from a point above the storage compartment of the silo.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 265, for reciprocating platen presses in which the actuation is by means of a weight.

- 70** This subclass is indented under the class definition. Apparatus including means to subject the solid material before, after, or during pressing to some treatment other than and in addition to pressing which other treatment causes a change of a physical or chemical characteristic of the solid material.

- (1) Note. The treatment here classified is of the compressed material and not of the expressed liquid. See this class, subclass 102, for combinations including means for treating the liquid expressed.

SEE OR SEARCH CLASS:

- 44, Fuel and Related Compositions, subclass 636 for apparatus especially adapted for use in manufacturing briquetted artificial fuel in which more than one operation is performed in making the briquette and the final operation is a briquetting of the material, and subclass 632 for apparatus for working peat by performing one or more operations and including the final modeling of the peat into briquettes.
- 65, Glass Manufacturing, subclass 306, for a press molding machine combined with means to treat a product formed thereby.
- 72, Metal Deforming, appropriate subclasses, for a combined machine for plastically shaping metal and otherwise treating it, e.g., handling, clean-

- ing or deoxidizing it, as provided for in the class. Heating or cooling means for merely taking the work to or from a proper working temperature are included whether specifically set forth in the subclass titles or not.
- 99, Foods and Beverages: Apparatus, subclasses commencing with 451, for apparatus specifically adapted for the preparation and treatment of food-stuffs, which apparatus may employ pressing.
- 131, Tobacco, subclass 31 for cigar and cigarette making apparatus having cooperating rolling surfaces in which the rolling mechanism is provided with means to treat the tobacco to change its physical or chemical character, and subclass 79 for cigar and cigarette making apparatus with means to mold or form the tobacco combined with means to treat the tobacco to change physical or chemical characteristics.
- 148, Metal Treatment, appropriate subclasses for processes of using pressure, with or without heat, in order to alter the internal structural characteristics or properties of metals and metal alloys.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 404, for a shaping means and a downstream product treating Means; see the search notes thereunder.
- 71** This subclass is indented under subclass 70. Apparatus in which the means to subject the material to additional treatment includes means for placing another substance with material compacted.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 215, for reciprocating platen presses having means to place the material on the means which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.
- SEE OR SEARCH CLASS:
- 68, Textiles: Fluid Treating Apparatus, subclass 17, for machines combined with means to supply soap or concentrated soap solution to the tub in which the fabric is treated with liquid.
- 99, Foods and Beverages: Apparatus, subclasses 516+, for applying a fluid to food, and subclass 494, for applying a solid or particulate material to food including pressing means.
- 101, Printing, subclass 335, for devices for attachment to printing apparatus for applying ink to the printing surfaces.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate apparatus subclasses, for means for applying adhesive to laminae surfaces and for pressing such surfaces together.
- 72** This subclass is indented under subclass 71. Apparatus in which the means for placing another substance with material compacted includes means for reintroducing into the press material which has already been compacted therein.
- SEE OR SEARCH CLASS:
- 241, Solid Material Comminution or Disintegration, subclass 97, for comminutors with means for recirculating material to comminuting zone.
- 73** This subclass is indented under subclass 71. Apparatus in which the means for placing another substance with material compacted includes means for introducing liquid and/or steam into contact with such material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 92, for heating the material by contact with a heated solid surface.
- SEE OR SEARCH CLASS:
- 38, Textiles: Ironing or Smoothing, subclass 3, for apparatus for smoothing textile material combined with a fabric moistener, subclasses 14+, for smoothing machines with means for effecting a flow of fluid whether it be a gas, a liquid or a vapor, to or

- through the work during the smoothing operation, and, subclasses 77.1+ for flat irons wherein the flat iron has means to apply moisture to the fabric being pressed.
- 68, Textiles: Fluid Treating Apparatus, appropriate subclasses, particularly subclasses 43+ and 94+ for machines for fluid treating textile fabrics for the removal of soil from them by the use of solvents and employing squeezing.
- 99, Foods and Beverages: Apparatus, subclass 287 for beverage infusors with means for stirring, commingling, or compressing the material during the infusing operation usually to facilitate formation of the infusion.
- 101, Printing, subclasses 147+ for dampeners for applying water or other in repellents to the printing surface of a planos:graphic printing machine.
- 241, Solid Material Comminution or Disintegration, subclasses 38+ for comminutors including means to apply fluid to the material.
- 74** This subclass is indented under subclass 73. Apparatus in which the means for introducing liquid and/or steam into contact with material compacted is so arranged that the liquid and/or steam is added to such material while it is moving either to or through the press.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
92+, for heating in the press by contact with a heated solid surface.
- 75** This subclass is indented under subclass 74. Apparatus in which the means for introducing liquid and/or steam into contact with material compacted is so arranged that the liquid and/or steam is added to such material while it is moving from one of a plurality of pressing stages to another pressing stage.
- 76** This subclass is indented under subclass 70. Apparatus in which the means to subject the material to additional treatment includes means for bending the material into layers, or spirally or helically disposing it in convolutions.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
5, for apparatus for applying a binding strand or wire to material and having means for winding or folding the material.
40, for methods involving pressing with winding or folding.
142, for plural diverse presses having a press conveying while pressing and means for loading the press which means is a packer moving through an inlet of the press such as a platen which may incidentally fold the material.
187, for presses concurrently conveying the material in which a plunger moves through a tube and there is a tucker which may bend down material protruding above the plunger.
218, for reciprocating platen presses having means to remove the material compacted from the means which supported the material during the compacting operation.
- SEE OR SEARCH CLASS:
19, Textiles: Fiber Preparation, subclass 149, for devices for bringing together fibers with relation to each other by winding.
68, Textiles: Fluid Treating Apparatus, subclass 46, for combined squeezing and liquid flow machines in which there is a roll about which the textile is wrapped and which carries the textile through the liquid and beneath another roller.
72, Metal Deforming, appropriate work and/or product handling subclasses.
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclasses 443+, for laminating including winding.
242, Winding, Tensioning, or Guiding, appropriate subclasses, for winding and reeling elongated material on a core for storage purposes.
266, Metallurgical Apparatus, subclasses 102+ and 160, for apparatus for coiling and heat treating metal.

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 319+, for means to form a preform and means to convolute or twist the preform, and subclasses 324+ for an apparatus comprising diverse distinct shaping means, especially subclass 328, for the combination of roll means and diverse press means.
- 77** This subclass is indented under subclass 76. Apparatus having means effective, after folding or winding of the material to move the material into the zone of action of pressure surfaces by which the material is pressed into a more compact state.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 215, for reciprocating platen presses having means to place the material on the means which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.
- 78** This subclass is indented under subclass 76. Apparatus having means to maintain the material in its folded or wound shape after release of the forces for bending the material into such shape.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 220, for reciprocating platen presses having means to restrain the material against rebound due to its elasticity.
- 79** This subclass is indented under subclass 76. Apparatus having means to pull or push a centrally located mandrel upon which the material has been wound from within the roll of material.
- SEE OR SEARCH CLASS:
- 29, Metal Working, subclasses 700+, for apparatus for disassembling including strippers, per se.
- 80** This subclass is indented under subclass 76. Apparatus having means by which successive bends are made in a single sheet of material so as to form a series of layers alternatively connected at their ends.
- SEE OR SEARCH CLASS:
- 19, Textiles: Fiber Preparation, subclass 160 and 163, for bringing together fibers with relation to each other by laying a web or sliver transversely to the movement of a base upon which it is being deposited.
- 81** This subclass is indented under subclass 80. Apparatus having means for successively setting the layers down in a receiver which swings between end positions which determine the location of the fold or folds in the material.
- 82** This subclass is indented under subclass 76. Apparatus in which the means for bending the material has a member with an opening, offset from an axis of rotation, through which the material moves as the member rotates about such axis.
- SEE OR SEARCH CLASS:
- 19, Textiles: Fiber Preparation, subclass 159, for devices for laying a sliver of fibers in a coil in a receptacle through an eccentric opening circularly moving.
- 83** This subclass is indented under subclass 82. Apparatus in which there is a pressure surface having rolling motion relative to the material acting on the material at the opening.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 65+, for apparatus in which a roller acting upon the top of material compacts it within a silo.
- SEE OR SEARCH CLASS:
- 239, Fluid Sprinkling, Spraying, and Diffusing, appropriate subclasses, for devices for discharging or distributing fluids.
- 84** This subclass is indented under subclass 82. Apparatus in which there is a mean associated with the opening which means forces material to pass through the opening by reciprocation to and from the opening.

85 This subclass is indented under subclass 82. Apparatus having means to receive the material as it is deposited through the eccentric opening, said means having a receiving surface which moves away from the orbit of the opening as the material is received.

86 This subclass is indented under subclass 76. Apparatus in which the means for bending the material includes an inner central core and a presser roll and the material is disposed circumferentially of the core and compressed thereon by the presser roll.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

89, for presses which wind a sheet, web, or strand within a cage of rolls and do not employ a mandrel.

155+, for concurrent pressing and conveying presses of the roll type, particularly subclasses 173+ for roll type concurrent pressing and conveying presses having material handling or guiding means.

210, for roll and platen type presses.

SEE OR SEARCH CLASS:

28, Textiles: Manufacturing, subclass 196 for apparatus for winding warp on a beam and having means to compress the warp on the beam as wound.

162, Paper Making and Fiber Liberation, subclasses 284+ for inventions for molding articles by winding a sheet of pulp upon a form until sufficient thickness is obtained.

87 This subclass is indented under subclass 76. Apparatus in which the means for bending the material includes a flexible member and the material is wound within a loop formed in the flexible member.

(1) Note. The flexible member is mounted so that it may give as the roll formed by the wound material enlarges during the winding.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

151+, for concurrent pressing and conveying presses of the endless conveyor type.

SEE OR SEARCH CLASS:

53, Package Making, subclass 215, for package wrapping machines in which a wrapper is disposed around the contents by rotation of the material within an apron.

131, Tobacco, subclasses 47+, for cigar and cigarette machines having cooperating rolling surfaces including an apron member which substantially encloses the tobacco in a single loop or bight during a rolling operation.

88 This subclass is indented under subclass 76. Apparatus in which the means for bending the material includes opposed flexible members and the material is wound or rotated into a roll by movement of such opposed flexible members relative to the material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

151+, for endless conveyor type concurrent pressing and conveying presses.

89 This subclass is indented under subclass 76. Apparatus in which the means for bending the material is a group of positively driven circumferentially spaced rolls and the material is wound into a bale within the space between the rolls, the wound bale being contained in said space.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

86, for presses which wind a sheet or web about a mandrel and employ an opposed presser roll or rolls.

155+, for concurrent conveying and pressing presses of the roll type, particularly subclasses 173+ for roll type concurrent pressing and conveying presses with material handling or guiding means.

210, for roll and platen presses in which the material is compressed by rolling motion between a stationary surface and a roll.

SEE OR SEARCH CLASS:

28, Textiles: Manufacturing, subclass 125 for apparatus in which material to be felted is rolled up and worked in a

machine in a rolled form and subclass 126 for apparatus in which material to be felted is rolled up and worked between a plurality of rolls so arranged as to provide a cavity between them in which the roll pack is held and worked.

- 90** This subclass is indented under subclass 70. Apparatus in which the means to subject the material compacted to additional treatment includes means for removing one substance from another.

- (1) Note. The substance removed may be air. In this subclass may be found, for example, presses having means subjecting the space between the platens to a vacuum to remove air from between layers of the material being pressed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 104+, for presses including means for collecting or a duct for transferring liquid coming from the material pressed as a result of the application of compressing force.
- 218, for reciprocating platen presses having means to remove the compacted material from the surface which supported it during the compacting operation.

SEE OR SEARCH CLASS:

- 53, Package Making, subclasses 79+, for package evacuating and sealing.
- 68, Textiles: Fluid Treating Apparatus, subclass 18 for machines combined with means to reclaim and reuse a solvent.
- 241, Solid Material Comminution or Disintegration, subclass 68, for comminutors with means for separation or classification of material.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 197+ for apparatus to shape plastic material and having an upstream straining or homogenizing screen.

- 91** This subclass is indented under subclass 90. Apparatus in which the means for removing one substance from another is apparatus for the separation of one solid from another.

SEE OR SEARCH CLASS:

- 209, Classifying, Separating, and Assorting Solids, subclass 599 and 699, for apparatus and methods which assort articles according to their compressibility or the degree to which they yield to pressure.
- 422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 261+ for apparatus for dissolving a compound or the soluble part of a composition of matter.

- 92** This subclass is indented under subclass 70. Apparatus in which the means to subject the material compacted to additional treatment includes means for changing the temperature or reducing the moisture content of the material compacted.

- (1) Note. Included here are patents to a device otherwise meeting the definitions of Class 269, Work Holders, but combined with heating, cooling or drying means. See the class definition of Class 269, section VIII for the line with this class (100).

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 73+, for adding steam or other heated fluid to the material being pressed.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, subclass 70, for apparatus for removing liquid from material in which there are two or more distinct means for removing the liquid and at least one of the means causes liquid removal by applying mechanical pressure to the solid material treated, and subclass 145, for apparatus in which the material to be treated is held between two opposed members which are movable or expandable toward one another to press or retain

- the material, and away from each other to release the material and there is means to pass a gas or vapor into contact with the material treated.
- 37, Excavating, subclass 226 for apparatus for excavating and compacting snow in which the compressor for the snow is provided with a heater.
- 38, Textiles: Ironing or Smoothing, subclass 74, for flat irons.
- 68, Textiles: Fluid Treating Apparatus, subclass 20, for machines combined with means to facilitate drying of the textiles by means of the passage of a gaseous medium through the textiles or by withdrawing vapor from the textiles.
- 72, Metal Deforming, appropriate subclasses, for a combined machine for plastically shaping metal and otherwise treating it, e.g., handling, cleaning or deoxidizing it, as provided for in the class. Heating or cooling means for merely taking the work to or from a proper working temperature are included whether specifically set forth in the subclass titles or not.
- 144, Woodworking, subclass 254, for a wood bending machine which includes a heating device for drying the wood in its bent form.
- 165, Heat Exchange, subclasses 168+, for a heat exchange platen, per se.
- 219, Electric Heating, subclasses 50+ for metal heating (e.g., resistance heating, etc.), especially subclasses 149+ for forging or shaping of a work piece, subclasses 443.1+ for an exposed horizontal planar support surface for material to be heated (e.g., hot plate, etc.), subclasses 600+ for inductive heating, subclasses 678+ for microwave heating, or subclasses 764+ for capacitive dielectric heating.
- 241, Solid Material Comminution or Disintegration, subclasses 65+, for comminutors with means to modify the temperature of the material.
- 266, Metallurgical Apparatus, subclasses 102+ and 160+, for apparatus which coils and heat-treats metal.
- 269, Work Holders, appropriate subclasses, Class 269 is the residual locus for patents to a device for clamping, supporting and/or holding an article (or articles) in position to be operated on or treated. See notes thereunder for other related loci.
- 422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 285+, for melt separators.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for shaping or reshaping apparatus for nonmetals including heating or cooling means for in situ treatment, especially subclasses 383+, for a vulcanizing means including a preform support, subclass 407, for a press couple shaping apparatus including heating and cooling means; and subclass 446 for means treating shaped work in or on a work confining surface; see the search notes thereunder.
- 94** This subclass is indented under subclass 70. Apparatus in which the means to subject the material to additional treatment includes means to sever or rupture the material into parts.
- (1) Note. Breaking or crushing up material due to compaction between surfaces is inherent in nearly all presses. The devices here classified have comminuting, breaking, cutting, piercing by some means in addition to the pressing surfaces to effect these operations upon the material pressed.
- (2) Note. The devices here classified do not include those in which piercing points are employed for antifriction purposes, as, for example, for preventing slippage of the material on the platen during compression. Not included also are pronged gates for arresting movement of the material in feeding as any piercing of the material by the prongs is merely incidental and not a significant treatment of the material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:**
- 6, for apparatus for applying a binding in combination with means for severing the material.

- 39, for methods including cutting or comminuting.
- 235, for plier type presses having a sharp spit-like member for piercing the material and holding in place while being compressed.
- 353, for a press having two or more systems which perform distinct functions and wherein the operation of one part depends upon the correct positioning of the regulating element of another part.

SEE OR SEARCH CLASS:

- 69, Leather Manufactures, subclass 2, for machines for cutting or trimming leather and at the same time creasing or otherwise impressing it for ornamental purposes or which simply crease or impress without cutting.
- 72, Metal Deforming, subclasses 324+, and other appropriate subclasses as indicated in the notes thereto, for combined machines which plastically shape and cut metal.
- 83, Cutting, subclasses 14+, for cutting process including ancillary treatment of work, and appropriate subclasses relating to the clamping of work in a cutting device; for example, subclasses 282, 375+ and 452+.
- 131, Tobacco, subclass 46, for cigar and cigarette making machines having cooperating rolling surfaces combined with means to trim the ends of the tobacco article, subclass 83, for cigar and cigarette making apparatus having means for molding or forming combined with a trimmer or perforating or slitting means, and subclass 118, for apparatus for making plugs, plug tobacco or compressed shapes of tobacco including separately cutting the molded material into plugs or shapes.
- 241, Solid Material Comminution or Disintegration, for comminutors of that class (241) type, particularly subclasses 101.01+, for comminution in combination with other apparatus, and subclasses 68+, for comminution and separation or classification.

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 289+, for a shaping or reshaping apparatus for nonmetals combined with cutting, perforating or severing means.

95

This subclass is indented under subclass 94. Apparatus in which the material severing or rupturing means is so arranged as to act on the material during its movement to or from the means for subjecting the material to compressive force.

- (1) Note. This subclass includes devices which cut material as it leaves the constriction of a concurrent pressing and conveying press. For cutting devices within the concurrent press severing the material during the compressing operation see the search notes below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 98, and see (1) Note above.

SEE OR SEARCH CLASS:

- 241, Solid Material Comminution or Disintegration, subclass 2, 25 and 101.1, for processes and apparatus for comminuting material combined with means to apply an expressing operation on the material prior to the comminuting operation and see section 12 of the class definition of Class 241 for the line between Class 100 and Class 241.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 289+, for apparatus for shaping or reshaping fluent or plastic material in combination with product cutting, scoring, or severing means.

96

This subclass is indented under subclass 95. Apparatus in which the material severing or rupturing means is so arranged as to act on the material moving to the press.

97

This subclass is indented under subclass 96. Apparatus in which the material severing or rupturing means has a sharp edge which severs the material.

SEE OR SEARCH CLASS:

65, Glass Manufacturing, subclass 112, for a process of treating a glass preform combined with severing or perforating; and see the collection of notes thereunder for the field of search on combined glassworking or treating and scoring, cutting or perforating.

98 This subclass is indented under subclass 94. Apparatus in which the severing or rupturing means is so arranged as to act on the material during the compacting operation.

99 This subclass is indented under the class definition. Apparatus having means (1) to detect some condition in the operation of the machine, the detecting means operating a visual and/or audible indication of the condition, (2) or to indicate or test a physical or chemical condition of the material under treatment.

SEE OR SEARCH THIS CLASS, SUBCLASS:

43+, for apparatus in which the detecting means effects the operation of some control to bring about some change in the operation of the apparatus.
341 through 352, for a press having a safety control system.

SEE OR SEARCH CLASS:

65, Glass Manufacturing, subclass 158, for a glassworking apparatus combined with a signal, indicator, or inspection means.
73, Measuring and Testing, subclasses 863+, for samplers, per se; and subclass 760, for determination of stress within a press structure absent detailed recitation of the press structure.
131, Tobacco, subclasses 280+, for cigar and cigarette making machines having automatic control means responsive to weight.
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 378, for laminating devices having measuring, testing or inspecting means.

209, Classifying, Separating, and Assorting Solids, subclass 599 and 699, for devices which assort articles by determining their compressibility.
324, Electricity: Measuring and Testing, appropriate subclasses, for apparatus for determining the electrical properties of material while under pressure including means to apply the pressure.
340, Communications: Electrical, subclasses 500+, for electrical automatic condition responsive indicating systems.

100 This subclass is indented under the class definition. Apparatus having wheels or skids for supporting the weight of the apparatus for rendering its movement bodily from one place to another expeditious.

SEE OR SEARCH THIS CLASS, SUBCLASS:

65, for pressure rollers actuated to travel over ensilage within a silo.

SEE OR SEARCH CLASS:

105, Railway Rolling Stock, appropriate subclasses, for wheeled transportation equipment for railways.
414, Material or Article Handling, subclasses 467+ for self loading or unloading vehicles which may have means for compressing the load to allow the vehicle to carry a greater, more compact load (see Lines With Other Classes, Binding and Pressing Elsewhere Classified, of the class definition of Class 100).

101 This subclass is indented under the class definition. Apparatus including means to bend a woven or knitted fabric to enclose in it the material compacted.

(1) Note. In the patents classified herein the covering material is always folded about the material compacted as distinguished from devices in which textile bags are filled with material to be compacted and pressed in such bags, the bags being closed by means other than by folding, such devices being in this class, subclasses 122+.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 122+, and see (1) Note above.
298, for apparatus for removing a cloth from a compacted cake.

SEE OR SEARCH CLASS:

- 53, Package Making, and appropriate subclasses, for apparatus for making commercial packages by enclosing material with a cover made from sheet material stock, and especially subclasses 523+, for such apparatus involving compacting the materials which are so enclosed.

102 This subclass is indented under the class definition. Apparatus claimed in combination with features other than and in addition to solid pressing surfaces, means to actuate them relative to one another so as to subject the material to pressure, means for mounting or supporting such pressing and actuating means and means to handle or guide the material treated.

- (1) Note. The solid pressing surfaces are the surfaces which contact the material treated and bear upon it with force to cause the treatment.
- (2) Note. In this subclass, for example, are press combinations including; means to scrape the platen or to flush the compression chamber, means to attach tags to a bale, a duct to vent a press box, means to ventilate the operating station, means to crush ice, presses mounted on chairs, elevators, etc.
- (3) Note. All preceding subclasses must be searched for particular combinations within the definition of this subclass as shown by the titles of such preceding subclasses.
- (4) Note. See Lines With Other Classes, Combined Pressing Elsewhere Classified, of the class definition for the location of apparatus of this class combined with apparatus classified in other classes.

103 This subclass is indented under the class definition. Apparatus having means by which an adjustment, addition, removal or reassembly of one or more of the parts of the apparatus causes the apparatus to be capable of performing some function other than pressing.

SEE OR SEARCH CLASS:

- 68, Textiles: Fluid Treating Apparatus, subclass 4, for textile fluid treating machines with some additive, removable, or displaceable part, other than the drive mechanism, and which part may or may not be replaced by another part to alter the function of the machine.

104 This subclass is indented under the class definition. Apparatus including means for collecting or a duct for transferring liquid coming from the material pressed as a result of the application of the compressing force.

- (1) Note. Mere openings or grooves for access or egress are not regarded as ducts.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 218, for reciprocating presses having means to remove the compacted material from the surface which supported it during compacting.

SEE OR SEARCH CLASS:

- 15, Brushing, Scrubbing, and General Cleaning, subclasses 260+, for mop wringers.
- 68, Textiles: Fluid Treating Apparatus, subclasses 19+, for machines combined with means for removing liquid from the textile.
- 99, Foods and Beverages: Apparatus, subclass 375, for cooking devices of the opposed heated mold or surface type, such as a waffle iron or sandwich-grill, having a drip or waste receptor or director; subclasses 501+ and 506+, for liquid recovery means combined with pressing means.
- 162, Paper Making and Fiber Liberation, appropriate subclasses for processes and apparatus for making fibrous arti-

- cles by depositing a fiber slurry on a foraminous surface and draining the suspending medium through the surface and especially subclasses 396+, for devices in which pressure is applied to express the suspending medium through the foraminous surface.
- 210, Liquid Purification or Separation, appropriate subclasses, for devices for separating liquids from solids, and see the statement of the class lines in the class definition of the (100) class.
- 105** This subclass is indented under subclass 104. Apparatus in which there are ducts or collecting means in which different liquids are conducted or gathered.
- (1) Note. The liquids may differ in kind or in grade of the same kind.
- 106** This subclass is indented under subclass 104. Apparatus in which there are means other than the pressing surfaces of a press for causing forced flow of the liquid from the press.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 218, for reciprocating platen presses having means to remove the material from the support on which it was compacted and see the notes thereto for other ejecting means.
- SEE OR SEARCH CLASS:
- 162, Paper Making and Fiber Liberation, subclass 335, 351+ and 363+ for devices placed below a foraminous forming surface wherein a partial vacuum may be produced to assist in drawing the water out of the pulp web.
- 107** This subclass is indented under subclass 104. Apparatus in which the collecting means or duct for transferring the expressed liquid is surrounded by the compacted material.
- 108** This subclass is indented under subclass 107. Apparatus in which the collecting means or duct has a tapered or sharpened end so that it may be pushed into the material so as to be surrounded thereby.
- SEE OR SEARCH CLASS:
- 99, Foods and Beverages: Apparatus, subclasses 501+ and 506+, for a comminutor especially adapted to enter a food for the purpose of liberating liquid.
- 109** This subclass is indented under subclass 107. Apparatus in which the collecting means or duct which is surrounded by the material extends through a plurality of pairs of superposed pressing surfaces which support or contain the material compacted.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 113+, for presses having drain means for the expressed liquid in which the drainage is through or along a pressure surface and the pressure surfaces are in stacked boxes or plates.
- 194+, for plural presses of the stacked box or plate type.
- 110** This subclass is indented under subclass 104. Apparatus in which a collecting means or duct for transferring the expressed liquid extends through or along one of the opposing surfaces which contact the material during the pressing operation to exert pressure on the material by movement relative to one another.
- 111** This subclass is indented under subclass 110. Apparatus in which the collecting means or duct is equipped with a means having a variable opening so that the flow of liquid there-through may be altered or stopped.
- 112** This subclass is indented under subclass 110. Apparatus in which means is provided for removing from the collecting means or duct solid material which would impede the progress of the expressed liquid therethrough.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 152, for means for removing material from the belt conveyor element of a concurrent press and conveyor.
- 174, for roll type concurrent pressing and conveying presses having means to strip the material from the roll.

- 205, for plural presses of the stacked box or plate type which have openings through the side walls of the chamber for loosening or removing the compacted material cake from within the chamber.
- SEE OR SEARCH CLASS:
- 15, Brushing, Scrubbing, and General Cleaning, subclass 256.5, for scrapers, wipers or brushes attached to a device having a moving surface as a part thereof and are so mounted as to act upon the surface to remove material therefrom during the normal operation of the device.
- 162, Paper Making and Fiber Liberation, subclasses 274+, for attachments for cleaning press felt or forming wires of web forming devices for paper making machines.
- 113** This subclass is indented under subclass 110. Apparatus in which there are a plurality of pairs of approaching surfaces, all parallel to one another and either superposed one on the other or side by side in a row, and the collecting means or duct is through or along at least one of the surfaces of each pair.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 109, for stacked box or plate presses having drain means for the expressed liquid in the form of a drain tube embedded in the material compacted.
- 194+, for plural presses of the stacked box or plate type.
- 114** This subclass is indented under subclass 113. Apparatus in which the pressure surfaces or plates comprising each pair are joined together by flexible means connected to both of them.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 200, for plural presses of the stacked box or plate type in which there are positioning or supporting means in the form of links, for maintaining the several boxes and plates in position relative to each other.
- 115** This subclass is indented under subclass 113. Apparatus directed solely to the specific structure of the pairs of approaching surfaces, per se.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 125, for presses including box or plate structures in which there is drainage along a fixed abutment or end wall surface.
- 194+, for plural presses of the stacked plate type.
- 116** This subclass is indented under subclass 110. Apparatus in which the surface through or along which the collecting means or duct extends is one which has motion relative to the stationary parts or frame of the apparatus during the pressing operation.
- 117** This subclass is indented under subclass 116. Apparatus in which the surface through or along which the collecting means or duct extends is a helical member which is rotated to exert the pressing force.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 145+, for concurrent pressing and conveying presses of the helical compressor type.
- 118** This subclass is indented under subclass 116. Apparatus in which the surface through or along which the collecting means or duct extends is an endless conveyor or a web or belt against which the material is pressed during the movement of the material by the belt from one position to another.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 151+, for concurrent pressing and conveying presses of the endless conveyor type.
- SEE OR SEARCH CLASS:
- 162, Paper Making and Fiber Liberation, subclass 314, for web forming apparatus comprising rolls which bear upon a pulp web on a forming screen to assist in the expressing of liquids therefrom and, subclasses 358.1+, for

- inventions relating to rolls and felts employed in pressing moisture out of the web after it has left the forming surface.
- 119** This subclass is indented under subclass 118. Apparatus in which the traveling endless conveyor, web or belt is concave transversely to form a channel holding the material.
- 120** This subclass is indented under subclass 119. Apparatus having means extending across the mouth or opening of the concavity so that the material is surrounded.
- 121** This subclass is indented under subclass 116. Apparatus in which the surface through or along which the collecting means or duct extends is one which has a continuous pressure surface which rotates circularly about an axis and has rolling contact with the material.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 155+, for roll type concurrent conveying and compressing presses.
 210, for presses of the type in which the compression is between the surfaces of a roll and a platen.
- 122** This subclass is indented under subclass 110. Apparatus in which the surface contacting the material during the pressing operation includes a woven or knitted member.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 211+, for presses with a flexible sheet pressure surface.
- 123** This subclass is indented under subclass 122. Apparatus in which the woven or knitted member is in the form of a receptacle having side-walls and a closed bottom and such receptacle is suspended by its mouth.
- 124** This subclass is indented under subclass 122. Apparatus in which a hoop or ring has means for clamping the edge of the woven or knitted member to sustain the material within it, or to support the woven or knitted member in assembled position in a press.
- 125** This subclass is indented under subclass 110. Apparatus in which the surface through or along which the collecting means or duct extends is an abutment which is fixed or stationary relative to the stationary parts or frame of the apparatus during the pressing operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 115, for boxes or plates structure, per se, having drainage through the bottom of the box or across the plate and usable in presses employing stacked boxes or plates.
- 126** This subclass is indented under subclass 104. Apparatus in which the collecting means or duct for transferring the expressed liquid is through or along a material retaining surface which extends along the direction of motion of relatively approaching pressing surfaces and is of a length such as to extend at least from one of the pressing surfaces to the other.
- 127** This subclass is indented under subclass 126. Apparatus in which the material retaining surface is in the form of a box, frame, cage or annular wall.
- (1) Note. In the devices classified in this subclass the box, frame, cage, or annular wall is substantially continuous around the plunger or piston.
- 128** This subclass is indented under subclass 127. Apparatus in which the wall is made up of stacked rings, annuli, or hoops.
- 129** This subclass is indented under subclass 127. Apparatus in which the wall is made up of longitudinally extending slats or staves, extending into the direction of the motion of the relatively approaching pressing surfaces.
- 130** This subclass is indented under subclass 104. Apparatus having means associated with the collecting means or duct and outside of the pressing zone for separating retained solids from the expressed material by allowing liquid to pass and retaining such solids.

- 131** This subclass is indented under subclass 104. Apparatus in which the collecting means for the expressed liquid is a trough or receptacle.
- 132** This subclass is indented under subclass 131. Apparatus in which the trough or receptacle carries the weight of the means for applying compressive force and causing expressing and said means is secured demountably or releasably to the trough or receptacle.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
227, for reciprocating platen presses in which there is a movable piston or platen which may be displaced to a nonuse position from a portable receptacle on which it is mountable.
- 133** This subclass is indented under subclass 132. Apparatus in which the receptacle is one from which the expressed liquid may be imbibed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
229, for reciprocating platen presses in which a receptacle or box is displaceable transversely of the direction of compression force to a nonuse position.
- 134** This subclass is indented under subclass 131. Apparatus in which the trough or receptacle is a reservoir for the expressed liquid and includes means to separate a portion of the liquid collected therein from the balance of said liquid.
- 135** This subclass is indented under subclass 134. Apparatus in which the separating means includes a channel along which the expressed liquid may flow as the receptacle or trough is tilted or overflows.
- 136** This subclass is indented under subclass 104. Apparatus having a surface against which the expressed material may impinge for the purpose of reducing the area of spread of the expressed liquid and deflecting or guiding it.
- 137** This subclass is indented under the class definition. Apparatus having several means for subjecting material to compressive force, in at least one of which the pressing surfaces differ in kind from those of at least one other.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
215+, for reciprocating platen presses with means to deposit the material on the means which supports the material during the pressing operation.
- 138** This subclass is indented under subclass 137. Apparatus in which at least one of the means for subjecting the material to compressive force is of the kind that carries the material bodily from a loading or inlet location to an unloading or outlet location while the compressive force upon the material is increasing and such means follows another means for subjecting the same material to compressive force.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
144+, for single concurrent pressing and conveying presses and for plural concurrent pressing and conveying presses of the same type.
188+, for concurrent pressing and conveying presses of the plunger type having feeding or discharge handling means.
207, for plural presses of the same type with material transfer from press to press.
215+, for reciprocating platen presses having means to deposit the material on the means which supports the material during the compacting operation and see the notes thereto for other presses having means to deposit material in the press.
218, for reciprocating platen presses in which there is means to remove the material from the surface which supported it during the compressing operation.
- SEE OR SEARCH CLASS:
72, Metal Deforming, appropriate subclasses for a combined machine which performs a plurality of forming operations on a metal workpiece, e.g., rolling and drawing it, subclass 206.
131, Tobacco, subclass 45 for cigar and cigarette making machines in which there are cooperating rolling surfaces

- combined with means for subjecting the tobacco bunch to compression prior to the rolling operation usually for the purpose of preshaping the tobacco.
- 222, Dispensing, subclasses 252+ for dispensing devices comprising containers having plural discharge assistants.
- 139** This subclass is indented under subclass 138. Apparatus in which there are two means for subjecting material to compressive force, each of which carries the material bodily from one location to another and the pressing surfaces of one of these means differ in kind from those of the other.
- SEE OR SEARCH CLASS:
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 328, for apparatus for shaping non-metals comprising roll means and diverse press means.
- 140** This subclass is indented under subclass 138. Apparatus in which the material is bodily removed from between the pressing surfaces of one means for subjecting the material to compressive force and placed into the means for subjecting the material to compressive force which is of the kind that carries the material bodily from one location to another while the compressive force upon the material is increasing.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
207, for presses with material transfer from press to press where the presses are of the same type.
- 141** This subclass is indented under subclass 138. Apparatus in which the material to be compressed by the means which carries the material from one location to another while the compressive force is increasing is first compacted within such means by a pressure surface moving in some direction other than that in which the material is to be carried by said means.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
188+, for concurrent conveying and pressing presses of the plunger type having means to feed material thereto.
- 142** This subclass is indented under subclass 141. Apparatus in which the pressure surface moves through an inlet of the means which carries the material from one location to another while the compressing force is increasing to compress the material against a side wall of said means.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
76+, for presses in which there are means to wind or fold the sheet material as it is placed in the press.
- 143** This subclass is indented under subclass 141. Apparatus in which the material is loaded into the means which carries the material from one location to another while the compressive force is increasing by several pressure surfaces which move in a direction across the compacting and conveying direction of said means.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
264, for reciprocating platen presses in which there are opposed platens both of which are actuated.
- 144** This subclass is indented under the class definition. Apparatus in which the material while the compressive force upon it is increasing is carried bodily from an inlet or loading zone to an outlet or discharge zone.
- (1) Note. In the devices here classified the material is moved from one position to another to transport it between openings generally by the platen causing compression or the pressure surface. For devices in which there is movement of the material from one place to another where the movement is incidental to the compressing operation see the Search This Class, Subclass notes below. SEE the Search Notes for a press actuated by the weight of the material between the platens, that is, the material resting on a platen and falling from one location to another

causes the movable platen to exert the compressive force. Additionally a movable platen may transport the material into contact with the stationary platen.

- (2) Note. The material may be pressed progressively in these presses. That is, successive increments are compressed which may be forced together into one mass or may have a distinct line of demarcation maintained between them.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 41, for methods involving the forcing of material through a constricted passage.
- 137+, for plural diverse presses one of which presses while conveying the material.
- 214+, for devices in which there is movement of the material from one place to another where the movement is incidental to the compressing operation search this class, subclasses 214+, particularly see subclass 239, where as the piston advances the box and piston and material all rotate,
- 218, for reciprocating platen press construction having means for displacing the material from the means which supported the material during the compression operation.
- 239, and see (1) Note above 265, and see (1) Note above
- 265+, for a press actuated by the weight of the material between the platens, that is, the material resting on a platen and falling from one location to another causes the movable platen to exert the compressive force. Additionally a movable platen may transport the material into contact with the stationary platen.

SEE OR SEARCH CLASS:

- 38, Textiles: Ironing or Smoothing, subclasses 7+, for machines with a movable device for transferring the articles smoothed to, through, from, or back to the front of the machines.
- 69, Leather Manufactures, subclass 47, for apparatus for the treatment of leather in which the leather is placed

on a support which is in motion during the treatment of the hide, skin or leather.

- 72, Metal Deforming, subclasses 253.1+, for extruding, metal through a bottomless closed shaping die, subclasses 343+, for push-drawing or deep drawing metal through such a die, and, subclasses 380+, for a bending press which may carry the work with the tool.
- 131, Tobacco, subclass 84.1 for cigar and cigarette making machines which mold tobacco into a continuous rod or ribbon.
- 164, Metal Founding, subclass 174 for die expressing sand mold or core forming apparatus and, subclasses 418+, for continuous metal casting apparatus.
- 184, Lubrication, appropriate subclasses for forced feed lubricators.
- 222, Dispensing, subclasses 251+ for dispensers with a discharge assistant for a container, note particularly subclasses 386+, for container with follower.
- 241, Solid Material Comminution or Disintegration, subclasses 84+ for a comminutor surface having openings and a cooperating surface whereby the material being comminuted is forced through the openings, and subclasses 82.1+, wherein a helical pusher moves the material being comminuted through a perforated member.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 335+, for sets of shaping couples comprising an endless surface (e.g., roll, belt, etc.) for press forming reshaping or vulcanizing.
- 452, Butchering, subclasses 35+ for apparatus for filling sausage casings.

- 145** This subclass is indented under subclass 144. Apparatus in which the material is forwarded by a rotating member having a fin or fins extending spirally about and along the axis of rotation and the material is compressed by being forced by the forwarding movement through a constricted passage of cross section smaller than that of the uncompressed material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 117, for presses in which there is drainage through or along a pressure surface in which the pressure surface is a movable surface helix.

SEE OR SEARCH CLASS:

- 141, Fluent Material Handling, With Receiver or Receiver Coacting Means, subclasses 256+ and 259, for helix type compressors utilized as rotary packing augers.
- 222, Dispensing, subclasses 412+, for containers with a rotary discharge assistant which has helically arranged projections, e.g., screws.
- 241, Solid Material Comminution or Disintegration, subclasses 82.1+, for a comminutor wherein a helical pusher moves material through a perforated member.
- 366, Agitating, subclass 69, for similar structure into means to enhance kneading or mixing of heavy plastics (e.g., gums, dough, etc.).
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 208, for shaping apparatus for non-metals with an upstream agitating or kneading means comprising a modified screw helix in a pressurizing chamber.
- 452, Butchering, subclass 44 for sausage stuffing machines in which a screw conveyor forces the material into a sausage case.
- 146** This subclass is indented under subclass 145. Apparatus in which the material is forwarded by plural parallel rotating finned members turning oppositely.
- 147** This subclass is indented under subclass 145. Apparatus in which the walls of the constricted passage are held in place by a limited but continuing force so that the size of the constriction may vary with the amount of material forced therethrough.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 169, for roller type concurrent pressing and conveying presses in which the rolls are yieldable so as to separate.
- 192, for plunger type concurrent pressing and conveying presses having an adjustable choke with features to permit overload relieving.

- 148** This subclass is indented under subclass 145. Apparatus in which there are means by which the size of the constricted passage may be changed by changing the position of the walls of the constriction relative to one another.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 191+, for plunger and casing type conveying presses having an adjustable choke.
- 149** This subclass is indented under subclass 145. Apparatus in which at least a portion of the wall of the constricted passage is removable.
- 150** This subclass is indented under subclass 145. Apparatus in which the material as it is carried forward by the rotating finned member comes against an abutment blocking the space between successive turns of the spiral.
- 151** This subclass is indented under subclass 144. Apparatus in which the material during pressing is carried forward by continuous traveling web like member which is a pressure surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 87, for presses having means for additionally treating the material in which such further treatment comprises winding or folding a sheet web or strand within an embracing belt loop.
- 88, for presses which wind sheet material between opposed belts.
- 118, for presses having drain means for an expressed liquid in which the drainage is through or along a pressure surface, and the pressure surface is on an endless conveyor.
- 222, for reciprocating presses with an indexing belt material support.

SEE OR SEARCH CLASS:

- 68, Textiles: Fluid Treating Apparatus, subclasses 44+, for machines provided with means to squeeze a textile, combined with means to effect relative motion between the textile and the liquid in which the squeezing of the textile is effected by the cooperation of a plurality of endless belts carrying the textile in or beneath a liquid and a squeezer.
- 131, Tobacco, subclass 55 for cigar and cigarette making machines having cooperating rolling surfaces in which one of the cooperating rolling surfaces is an endless belt.
- 164, Metal Funding, subclasses 427+, for continuously advancing metal casting means.
- 222, Dispensing, subclass 415, for containers which have a discharge assistant in the form of an endless belt.
- 152** This subclass is indented under subclass 151. Apparatus having means to place solid material on or remove it from the endless belt type pressing member.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 112, for devices for cleaning drain holes in a belt.
- 215, for reciprocating platen presses having means to deposit the material on the means which supports the material during the compressing operation.
- 218, for reciprocating platen presses having material displacing or ejecting means and see the notes thereto for other presses with similar structure.
- 153** This subclass is indented under subclass 151. Apparatus in which the material is pressed between the traveling web and a coacting body which rotates about an axis while rolling upon the material during pressing.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 155+, for presses in which the opposed pressing elements are both rolls.

SEE OR SEARCH CLASS:

- 38, Textiles: Ironing or Smoothing, subclass 9, for pressing machines with a movable device for transferring the articles smoothed to, through or from the back or front of the machine wherein the movable device is a conveyor belt which passes between opposing press elements.
- 68, Textiles: Fluid Treating Apparatus, subclass 45 for machines provided with means to squeeze a textile, combined with means to effect a relative motion between the textile and the liquid in which the squeezing of the textile is effected between an endless belt carrying the textile in or beneath a liquid and a squeezer and subclass 267 for wringers for pressing liquid from treated material in which the textile is carried through the wringer by means of an apron or belt passing through the bite of the rolls.
- 69, Leather Manufactures, subclass 41 for apparatus for the treatment of leather by the use of the tool which is positively rotated upon its own axis during contact with the leather worked upon and the leather during treatment with the rotating tool, is supported by a cylindrical roll.
- 99, Foods and Beverages: Apparatus, subclasses 557+ for a roller or belt contacting another member to press seeds from food, subclass 575, for adjacent surfaces that separate the shell from food, one surface of which rotates, and, subclass 625, for relative moving means that cooperate to remove the skin of food.
- 144, Woodworking, subclass 255 for a wood bending device which has a rotating roller which forces the wood against the yielding or unyielding roller, a belt, or shoe to crimp the wood without securing it to a former.
- 162, Paper Making and Fiber Liberation, subclass 314 for web forming apparatus comprising rolls which bear upon a pulp web on a forming screen to assist in the expressing of liquids therefrom.

- 154** This subclass is indented under subclass 151. Apparatus in which the portion of the endless belt against which the material is being pressed is supported on the side opposite from that receiving the pressure by a means separate from the belt located between loops or bends in the belt.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 160, for roll type pressing apparatus having a backup roll supporting a working roll.

- 155** This subclass is indented under subclass 144. Apparatus in which the material is compressed between bodies having pressure surfaces and at least one of bodies has a continuous pressure surface which rotates circularly about an axis with respect to the material and successive portions of the surface engage the material in rolling contact therewith.

- (1) Note. Rolling mills for plastically shaping or bending metal are generally classified in Class 72, Metal Deforming. A number of the classified characteristics are similar to or parallel those set forth in subclasses indented hereunder. Class 72 should be investigated in any case involving roll type press, especially in metal shaping.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 86, for presses which have additional treatment of the material in which such additional treatment involves winding a sheet, web, or strand upon a mandrel with pressure exerted by an opposed roll.
- 89, for presses which additionally treat the material to change their physical characteristic in which the additional treating involves winding a web, sheet or strand within a cage of pressure rolls.
- 121, for presses having drain means for expressing liquid through a pressure surface in which the pressure surface is on a roll.

- 153, for presses in which a roll and an endless belt are the opposing pressing members.

SEE OR SEARCH CLASS:

- 12, Boot and Shoe Making, subclass 65 for toe and heel stiffener forming machines which mold the material between rolls or between a roll and a fixed form, the roll being rotated to feed the blank through.
- 15, Brushing, Scrubbing, and General Cleaning, subclass 262, for mop wringers employing one or more pressure rollers for squeezing moisture from the mop.
- 38, Textiles: Ironing or Smoothing, subclasses 44+, for smoothing machines of the roller pressure type, and, subclasses 100+, for smoothing instruments consisting of rolls or rollers.
- 65, Glass Manufacturing, subclass 253, for a glass sheet or strip rolling means; see the "Search Notes" thereunder.
- 68, Textiles: Fluid Treating Apparatus, subclass 22, for textile treating machines combined with squeezing means of the roller type to extract liquid from the textile subsequent to the liquid treatment, subclasses 97+, for machines in which a textile is squeezed while subjected to a liquid and which embody a roll which rolls over a textile, or squeezing machines wherein the textiles are carried by said roll into and between the roll and a cooperating squeezing element and, subclasses 244+, for wringers for removing liquid from textile material where the wringer is of the roller type.
- 69, Leather Manufactures, subclasses 42+ for apparatus for the treatment of leather by the use of a tool which is positively rotated upon its axis during contact with the leather and the leather during treatment with the rotating tool is supported by a cylindrical roll.
- 72, Metal Deforming, appropriate subclasses. See (1) Note above.
- 83, Cutting, subclasses 284+, for a flying cutter, and, subclasses 509+, for a cut-

- ting tool pair comprising a rotatable anvil.
- 99, Foods and Beverages: Apparatus, subclass 457, 462+, and 464, for revolving surfaces that treat dairy food; subclasses 557+, for a roller or belt contacting another member to press seeds from food, subclass 575, for adjacent surfaces that separate the shell from food, one surface of which rotates, and, subclass 625, for relative moving means that cooperate to remove the skin of food.
- 101, Printing, subclasses 3.1+ appropriate subclasses entitled "rolling contact" for embossing or penetrating printing machines, subclasses 22+, for rolling contact embossing machines and subclasses 216+, for machines for printing by exerting a rolling contact upon the printing surface and the surface to be printed upon in which the work is engaged in rolling contact between the peripheries of rotating members.
- 131, Tobacco, subclasses 27.1+, for cigar and cigarette making machines having cooperating surfaces which rotate about the tobacco to form a cigar or cigarette, place a wrapper thereon, or perform analogous operations, subclass 56, for cigar and cigarette making machines having cooperating rolling surfaces in which the cooperating rolling surfaces comprise a plurality of rollers, subclasses 84.1+ for cigar and cigarette making machines which mold or form the tobacco and shape it into a continuous rod of tobacco of indefinite length, and subclasses 116+, for plug or compressed tobacco shape making machines wherein the tobacco is molded into a sheet of indefinite length from which the plugs may be separated.
- 144, Woodworking, subclass 255, for a woodbending machine wherein a rotating roller forces the wood against a yielding or an unyielding roller, a belt, or a shoe to crimp the wood without securing it to a former.
- 164, Metal Founding, subclass 428 for roll couple, metal casting means.
- 222, Dispensing, subclass 281, for containers with a discharge assistant such
- containers having a single outlet formed by plural discharge assistants where the discharge assistants are parallel rolls.
- 226, Advancing Material of Indeterminate Length, appropriate subclasses, for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.
- 399, Electrophotography, subclasses 222+ for development, particularly subclasses 279+ for a roller-type application member; subclass 318 for transfer by pressure; subclasses 320+ for fixing, particularly subclass 331 for pressure roller; subclass 357 for cleaning roller; and subclasses 361+ for document handling.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 362, for shaping apparatus for non-metals comprising a roll press member coacting with an endless surface having shape imparting cavities therein; and subclasses 363+, for a press forming, reshaping or vulcanizing means comprising a roll or endless belt; see the search notes thereunder.
- 452, Butchering, subclass 142 for meat tenderers in which the meat is passed between a plurality of rolls.
- 492, Roll or Roller, for a roller, per se, not elsewhere provided for, and see the notes thereunder.
- 156** This subclass is indented under subclass 155. Apparatus in which the material is pressed between the rotating pressure surface and another surface which does not rotate with respect to the work but across or on which the work is transported during the pressing operation.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 210, for roll and platen presses in which there is no conveying of the material during the pressing operation.
- SEE OR SEARCH CLASS:
- 12, Boot and Shoe Making, subclass 34, for machines for laying and leveling shoe soles in which the shoe is sup-

- ported on a jack and subjected to pressure by a rotating roll with the roll moving along the length of the sole and, subclass 65, for machines for molding toe and heel stiffeners by rolls or between a roll and a fixed form with the roll being rotated to feed a blank through.
- 68, Textiles: Fluid Treating Apparatus, subclass 105, for squeezing machines in which a textile is squeezed while subjected to a liquid and the squeezing machine is of the roll type wherein the roll rotates on a fixed axis and the bed is translated rectilinearly or oscillatably about an axis.
- 69, Leather Manufactures, subclass 44, for apparatus for the treatment of leather by the use of a tool which is positively rotated upon its own axis during contact with the leather and the leather is placed upon a work support which is in motion during treatment of the hide.
- 72, Metal Deforming, subclass 220, for devices in which the metal is shaped between a roll and a moving platen.
- 101, Printing, subclass 250, for rolling contact printing machines comprising a flat printing member and a cylinder between which the work is engaged by rolling contact.
- 144, Woodworking, subclass 255, for a wood bending machine which includes a rotating roller which forces the wood against a yielding or an unyielding roller, a belt, or a shoe to crimp the wood without securing it to a former.
- 452, Butchering, subclass 143 for meat tenderers in which a roll coats with a plate.
- 157** This subclass is indented under subclass 155. Apparatus under, ... , in which the material is compressed between at least two rotating bodies having continuous pressure surfaces and in which one of the rotating bodies is annular and the working surface is on the inner surface of the annulus and the opposing working surface is on the exterior of a rotating body within the annulus.
- SEE OR SEARCH CLASS:
- 68, Textiles: Fluid Treating Apparatus, subclass 98, for machine in which a textile is squeezed while subjecting it to a liquid and a roll or drum has a planetary motion by reason of which a textile is squeezed between the roll or drum and a cooperating surface.
- 72, Metal Deforming, for a means to shape a tube-like metal workpiece between internal and external rollers.
- 158** This subclass is indented under subclass 155. Apparatus in which the material is compressed between at least two continuous rotating bodies having pressure surfaces and in which the axis about which one of the bodies rotates is at an angle to the axis about which another of the bodies rotates.
- (1) Note. The subclass includes a rotary table or disc and a roll as opposing pressure surfaces.
- SEE OR SEARCH CLASS:
- 68, Textiles: Fluid Treating Apparatus, subclass 108, for machines for squeezing a textile while subjected to a liquid in which the squeezing is provided with a roll or wheel and a bed mounted to rotate on a vertical axis in which the roll or wheel axis is radial to a vertical axis with the roll or wheel located wholly to one side of the vertical axis.
- 72, Metal Deforming, appropriate subclasses under 67+, 127+ and 199+, for a metal deforming apparatus which utilizes skewed or inclined rollers.
- 99, Foods and Beverages: Apparatus, subclass 461, for plural relatively movable surfaces that may have non-parallel axes.
- 159** This subclass is indented under subclass 155. Apparatus in which the axis of the rotating pressure surface is upright.
- 160** This subclass is indented under subclass 155. Apparatus in which at least one of the bodies the rotary surface of which acts to press upon the material is supported on the side of the body opposite that on which such pressing sur-

face contacts the work by an auxiliary rotary body located at a place where the support is in opposition to the material passing the pressing body.

- (1) Note. This apparatus includes presses in which the pressing rolls are in the form of an annulus and the backup roll is within the opening of the annulus.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 154, for endless belt type concurrent conveying and compressing apparatus having an auxiliary support for the belt opposite the area of pressing.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclass 163 and 241+.

- 161** This subclass is indented under subclass 155. Apparatus in which material is compressed between more than one pair of bodies with surfaces having rolling contact with the material.

- (1) Note. The plural presses here classified usually act successively upon the same material with the material going through one press and then through a succeeding press.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 193+, for plural presses not otherwise provided for.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclasses 221+, and 226+.

- 162** This subclass is indented under subclass 161. Apparatus in which the same rotating surface of a single body opposes at least two other rotary surfaced bodies to form with them pairs of rolling surfaces of plural passes.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclass 223 and 232+.
- 399, Electrophotography, subclasses 222+ for development, particularly subclasses 279+ for a roller-type application member; subclass 318 for transfer

by pressure; subclasses 320+ for fixing, particularly subclass 331 for pressure roller; subclass 357 for cleaning roller; and subclasses 361+ for document handling.

- 163** This subclass is indented under subclass 162. Apparatus in which the rotary body common to the two passes is urged under a limited but continuing force toward at least one of rotary surfaced bodies with which it forms a rolling pass so that the surfaces of the bodies may spread apart or approach one another as the amount of material passing between them changes.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 169, for concurrent pressing and conveying presses of the single roll pass type with a yieldable roll.

- 164** This subclass is indented under subclass 163. Apparatus in which the direction of application the force which urges the rotary bodies together may be shifted.

- 165** This subclass is indented under subclass 163. Apparatus in which the path of movement of the common rotary body is such that as the common roll moves the spacing of one pass may vary in size differentially from the other roll pass.

- 166** This subclass is indented under subclass 162. Apparatus having a guide surface which directs the material coming from one roll pass into the bight of another roll pass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 174, for concurrent conveying and pressing apparatus of the roll type having means to deflect the material coming from a roll press away from at least one of the rolls.

- 167** This subclass is indented under subclass 161. Apparatus in which the plural pairs of bodies have between them a means to conduct the material coming from one pair of rotary bodies to another pair of rotary bodies.

- (1) Note. The conducting means of the apparatus here classified may be, for exam-

ple, a power operated conveyor or a chute down which the material slides.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 173, for single pass roll type concurrent pressing and conveying presses with material handling or guiding means.
- 174, for single pass roll type concurrent pressing and conveying presses having means to strip the material from a roll.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclasses 227+.

- 168** This subclass is indented under subclass 155. Apparatus having means such that the distance between the axis of the rotary body and the opposed pressing body may be altered.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 47, for presses having automatic or material triggered control of the separation of rolls or of roll speed.

SEE OR SEARCH CLASS:

- 68, Textiles: Fluid Treating Apparatus, subclass 256, for means to apply or release pressure between wringer rolls.
- 72, Metal Deforming, subclasses 237+, for metal rolling mills having means to adjust the rolls to vary the size or shape of the roll pass. Where the adjustment is made automatically in response to a predetermined condition, search the appropriate subclasses under 6+.
- 226, Advancing Material of Indeterminate Length, appropriate subclasses, for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

- 169** This subclass is indented under subclass 168. Apparatus in which the rotary bodies are urged toward one another under limited but continuing force so that the axes of the rolls may spread apart or approach one another as the amount of material between them changes.

- (1) Note. Means may be included in the apparatus so that the force urging the rolls together may be adjusted so as to change in amount.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 147, for concurrent pressing and conveying presses of the helix type compressor which have an overload release.
- 163, for roll type concurrent conveying and compressing presses having plural stages or passes with a common roll which is yieldable.
- 192, for plunger type concurrent pressing and conveying presses having an adjustable choke which is overload relieving.

SEE OR SEARCH CLASS:

- 68, Textiles: Fluid Treating Apparatus, subclass 101 for squeezing machines for squeezing a textile while it is subjected to liquid wherein the squeezing action is effected between a roll and a bed made up of rollers and the bed is resiliently mounted, subclass 257, for wringers for removing liquid from textiles having means to release the pressure of one roll on another by bodily shifting one roll away from the other against the action of means constantly tending to press the rolls together and, subclass 259, for wringers for removing the liquid from textiles having means to release the pressure between the rolls effected through abnormal separation of the rolls.
- 72, Metal Deforming, subclass 240 for means to vary the bite of a roller couple in a rolling mill during operation.
- 241, Solid Material Comminution and Disintegration, subclass 32 for comminuting apparatus provided with means which rigidly connects two comminutor parts under normal working conditions but which on imposition of an overload, will disconnect the parts to prevent damage to the comminutor.

- 170** This subclass is indented under subclass 169. Apparatus in which the urging force is transmitted through a liquid or a gas.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
269.01+, for reciprocating platen presses in which the actuation is by fluid pressure.
- SEE OR SEARCH CLASS:
384, Bearings, subclass 99, for a hydraulic, or pneumatic bearing support and subclass 100 for a fluid bearing.
- 171** This subclass is indented under subclass 169. Apparatus in which a solid resilient member exerts the force urging the rotary bodies together.
- SEE OR SEARCH CLASS:
384, Bearings, subclasses 202+, for a resilient bearing support.
- 172** This subclass is indented under subclass 155. Apparatus including means to cause the rotary bodies to rotate relative to one another.
- SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclass 269, for wringers with special gearing to drive the same or wringers with special bearing structure.
- 173** This subclass is indented under subclass 155. Apparatus which include, in addition to the pressing structure, means for manipulating or directing the movement of the material.
- (1) Note. This subclass includes, for example, conveyors, feeders or chutes for presenting the material to be pressed to the bight of the pressing rolls.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
86, for presses which wind a bat on a mandrel and have an opposed pressure roll.
89, for presses which wind a bat of the material, the winding being within a cage of rolls.
- 167, for roll type concurrent pressing and conveying presses with plural stages or passes and a chute or conveyor between stages.
- 215, for reciprocating platen presses having means to deposit the material on a support which supports the material during the compacting operation and see the Notes thereto for other presses having material depositing means.
- 218, for reciprocating platen presses having means to eject the material and see the Notes thereto for other presses having ejecting means.
- SEE OR SEARCH CLASS:
68, Textiles: Fluid Treating Apparatus, subclasses 264+, for wringers provided with guard means between a roller and a bearing, or with guard means either in advance of the roll bight or about the rolls to hinder access of the hands of an operator to the bight of the rolls, or wringers provided with means to direct or carry fabric to or from the bight of the rolls.
- 72, Metal Deforming, subclasses 227+, and 250+.
- 101, Printing, subclasses 232+, for machines having rotary printing elements and means to move the sheets to be printed to or from printing position.
- 131, Tobacco, subclasses 38+, for cigar and cigarette making machines employing cooperating rolling surfaces and having means for feeding the tobacco or tobacco bunch to the rolling apparatus.
- 174** This subclass is indented under subclass 173. Devices including a deflector adjacent the outgoing side of the rotary body which deflector is so mounted as to direct the pressed material away from the surface of the rotary body.
- (1) Note. This subclass includes scrapers bearing on the roll to remove material therefrom.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
112, for presses with drain means extending through or along the pressure sur-

face and having a clearer or cleaner for the pressing surface or drain means.

- 166, for plural stage roll arrangements having a common roll and a guide surface directing the material coming from one pass into another roll pass.
- 167, for plural stage or pass roll arrangements having means to conduct the material coming from one roll pass into a succeeding roll pass.

SEE OR SEARCH CLASS:

- 15, Brushing, Scrubbing, and General Cleaning, subclass 256.5, for doctors or scrapers for keeping rolls free and clean wherein only the scraper, per se, is claimed or the roll is recited in the combination only nominally.
 - 68, Textiles: Fluid Treating Apparatus, subclass 128, for means for stripping textiles from squeeze rolls employed to squeeze the material while subjected to liquid to prevent the winding of the textile thereabout, and subclass 270, for wringers for effecting the removal of liquid from textiles in which there are devices for stripping textiles from the wringer rolls to prevent their winding about the rolls.
 - 118, Coating Apparatus, subclass 245, for rotary applicators having means to strip coated material from the applicator.
- 175** This subclass is indented under subclass 173. Devices in which the guide is so mounted as to protect a bearing on which the rotary body turns by bending material away from it.

SEE OR SEARCH CLASS:

- 384, Bearings, subclass 130, for a rotary bearing with a specified seal i.e., for preventing matter from entering into, passing through, or escaping from a bearing.
- 176** This subclass is indented under subclass 155. Apparatus comprising at least two coating rotary bodies between which material is compacted.

SEE OR SEARCH CLASS:

- 226, Advancing Material of Indeterminate Length, appropriate subclasses, for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.
- 399, Electrophotography, subclasses 222+ for development, particularly subclasses 279+ for a roller-type application member; subclass 318 for transfer by pressure; subclasses 320+ for fixing, particularly subclass 331 for pressure roller; subclass 357 for cleaning roller; and subclasses 361+ for document handling.
- 492, Roll or Roller, for a roller, per se, not elsewhere provided for, and see the notes thereunder.

177 This subclass is indented under subclass 144. Apparatus having a cavity in which the material is compacted and means to change the position of the cavity from one location to another during the compacting operation.

- (1) Note. This subclass includes presses in which a paddle wheel with radially sliding paddles is mounted to rotate within and in eccentric relation to a surrounding wall so that on a rotation of the wheel the paddles forward the material and the chamber defined by the wheel, paddles and surrounding wall diminishes in volume as the paddles are forced inwardly by the eccentric relation of wheel to wall.

178 This subclass is indented under subclass 177. Apparatus in which the press has pressure surface which reciprocates within the compression chamber to compact the material in the chamber.

- (1) Note. This subclass includes presses in which a series of separate cavities are filled successively at one location and then moved to another location and during such movement a platen or piston moves within each cavity to reduce the volume occupied by the filling material.

- (2) Note. The devices here are usually plural.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 116, for piston and platen type presses in which there is drainage of expressed liquid through or along the pressure surface.
193+, for plural presses not otherwise provided for.
214+, for reciprocating platen presses.

SEE OR SEARCH CLASS:

- 99, Foods and Beverages: Apparatus, subclass 373 for cooking apparatus including two movably connected heated plates adapted to be positioned so as to confine and contact food material therebetween and having means for bodily transporting both cooking surfaces from a feeding station to a discharging station.
131, Tobacco, subclass 87, for devices for making cigars and cigarettes in which the tobacco is molded and there being a plurality of molds carried upon a rotary or endless carrier.
141, Fluent Material Handling, With Receiver or Receiver Coacting Means, subclasses 71+, for devices for filling receivers and having means for compacting the contents material.
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 345, for a transversely traveling mold in a combination of plural sets each set comprising a female mold and opposed coaxial dynamic male press members, subclasses 347+, for sets of male-female press molds having traveling female molds, subclasses 352+, for a female mold and opposed coaxial dynamic press members, subclass 356, for plural shaping plungers or rolls coacting with a single female mold, and, subclass 357, for plural female mold cavities which coact with a single press member.

- 179** This subclass is indented under subclass 144. Apparatus in which a reciprocatory pressure surface forwards the material through a tubular casing while compressing the material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 116, for presses in which there is drainage of expressed liquid along a piston or platen surface.
214+, for reciprocating platen presses.

SEE OR SEARCH CLASS:

- 222, Dispensing, subclasses 386+, for dispensing containers having a discharge assistant of the follower type.
452, Butchering, subclass 40 for sausage stuffing apparatus in which a plunger forcing material into a casing, oscillates back and forth, and subclasses 42+ for sausage stuffers in which a piston reciprocates back and forth in a straight line.

- 180** This subclass is indented under subclass 179. Apparatus having divider members interposed between material placed in successive amounts intermittently into the tubular casing.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 44, for presses with automatic or material triggered control of separator insertion between material portions.

SEE OR SEARCH CLASS:

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 376.1+, for extrusion shaping apparatus having an intermittent feed and stock pressurizing means whereby detached blocks are formed.

- 181** This subclass is indented under subclass 180. Apparatus in which the reciprocating pressure platen carries more than one divider for separating the intermittently placed quantities of material.

- 182** This subclass is indented under subclass 180. Apparatus in which a plurality of dividers is connected to an endless belt which carries them

- as they travel through the casing and returns them to charging position.
- 183** This subclass is indented under subclass 180. Apparatus in which the casing carries a means for transversely propelling the divider block into the casing.
- 184** This subclass is indented under subclass 180. Apparatus in which divider or separator blocks, per se, are claimed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
295+, for platen structure, per se.
- 185** This subclass is indented under subclass 179. Apparatus in which there is more than one tubular casing through which the material is forwarded while being compressed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
193+, for plural presses which do not forward the material while under compression.
- 186** This subclass is indented under subclass 185. Apparatus in which there are either (1) plural casings having a common axis but extending in opposite directions, or (2) a single straight casing open at both ends through which ends the material is conveyed in opposite directions.
- 187** This subclass is indented under subclass 179. Apparatus in which the casing supports (1) means which prevents the compacted material from expanding in the direction toward the pressing platen after the material has been compressed, or (2) means adjacent the filling opening and above the path of movement of the pressing platen such that, as the plunger retracts from the compressing position, the material above the top of the pressing platen not compressed thereby will be forced downwardly into the path which the pressing platen would pursue in the succeeding stroke.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
76+, for presses with means to wind or fold a sheet, web or strand.
- 220, for reciprocating platen presses having material rebound restraining means.
- 188** This subclass is indented under subclass 179. Apparatus in which there is means to place material on a support which carries the material during the compacting operation or means to handle the compressed material as it is conveyed from the press.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
138+, for plural diverse presses in which at least one of the presses concurrently presses and conveys the material where the other press acting as a means for loading material into or compressing material within the casing of a concurrently conveying and pressing press. See particularly subclasses 141+, for platen presses loading concurrently pressing and conveying presses in which usually the bottom of the casing acts as a stationary platen for the platen press.
- 215, for reciprocating platen presses having means to deposit the material on the means which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.
- 218, for reciprocating platen presses having means for removing the material that has been compacted from the support which carried the material during the compacting operation.
- SEE OR SEARCH CLASS:
141, Fluent Material Handling, With Receiver or Receiver Coacting Means, subclasses 71+ for devices for filling receivers and having means for compacting the contents material.
- 221, Article Dispensing, appropriate subclasses, and see the reference to Class 221, Lines With Other Classes, Binding and Pressing Elsewhere Classified, and Press Subcombinations, in the class definition of this class (100).
- 222, Dispensing, appropriate subclasses, see the reference to Class 222 in the class definition.

- 189** This subclass is indented under subclass 188. Apparatus in which the feeding or discharging means carries the material up to or forces it through the feed opening in the side wall of the casing through which the material is forwarded for compaction.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 142, for plural diverse presses in which a press is loaded by a transversely moving platen or packer which moves through the inlet for the press.
- 190** This subclass is indented under subclass 179. Apparatus having means by which the movement of material through the loading opening of the press is prevented.
- 191** This subclass is indented under subclass 179. Apparatus in which there are means by which the size of the outlet end of the tubular casing may be changed by changing the position of the walls relative to one another.
- 192** This subclass is indented under subclass 191. Apparatus in which the walls of the casing are held in place by a limited but continuing force so that the size of the outlet opening may vary with the amount of material forced there-through.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 147, for concurrent pressing and conveying presses of the helix type compressor having overload release.
- 169, for concurrent type pressing and conveying presses having rolls in which the rolls are yieldable relative to one another.
- 193** This subclass is indented under the class definition. Apparatus including more than one pair of opposing pressure surfaces such pairs (1) not concurrently co-compressing the same material and/or (2) being either separately actuated or compressing during movement in different directions if having a single actuator.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 161, for plural stage rolling mills.
- 178, for plural moving compression chamber conveying presses.
- 185, for plural plunger and casing type conveying presses.
- SEE OR SEARCH CLASS:
- 12, Boot and Shoe Making, subclasses 36+, for shoe sole laying and leveling machines having multiple work supports for the shoes being operated upon.
- 34, Drying and Gas or Vapor Contact With Solids, subclass 144 for apparatus in which the material to be treated is held between two opposed members which are movable or expandable toward one another to press or retain the material, and away from each other to release the material and there are a plurality of press couples which may constitute single or plural machines.
- 38, Textiles: Ironing or Smoothing, subclasses 4+, for multiple smoothing machines having independent pressing couples.
- 83, Cutting, subclasses 255+ and 404+, for cutting devices having means to move work to and through a plurality of tool stations, and subclasses 282, 375+ and 452+, for a work clamp associated with a cutting machine.
- 99, Foods and Beverages: Apparatus, subclass 374, for cooking devices having two movably connected heated plates adapted to be positioned so as to confine and contact food material therebetween in which there are two or more pairs of such cooking surfaces.
- 131, Tobacco, subclass 80, for cigar and cigarette machines comprising means for molding or otherwise forming the tobacco including means for carrying out a plurality of molding or forming operations, and subclass 115, for plug or compressed tobacco shape making machines involving the use of a plurality of molding means arranged on a turret.
- 194** This subclass is indented under subclass 193. Apparatus in which the pressure surfaces of the plural pairs are all parallel to one another and

either superposed one on the other or side by side in a row.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 109, for presses of the stacked box or plate type having a drain tube surrounded by the press material.
- 113, for stacked box and plate type presses where there is drainage through or along a pressure surface.
- 229, for reciprocating platen presses in which there is nonuse displacement of a box, receptacle or stationary platen.

195 This subclass is indented under subclass 194. Apparatus in which there is more than one row or super-posed pile of plural pairs of pressing surfaces.

196 This subclass is indented under subclass 194. Apparatus having means for placing the material to be compressed on or removing it from the means which supports the material during the compressing operation.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 215+, for reciprocating platen presses having means to deposit material on the means which supports the material during the compacting operation and see the Notes thereto for other presses having material depositing means.
- 218, for reciprocating platen presses having means for removing material from the means which supports the material during the compacting operation.

SEE OR SEARCH CLASS:

- 221, Article Dispensing, appropriate subclasses, and see the reference to Class 221 in Lines With Other Classes, Binding and Pressing Elsewhere Classified, and Press Subcombinations, of the class definition of this class (100).
- 222, Dispensing, appropriate subclasses, and see the reference to Class 222 in the class definition of this class (100).
- 414, Material or Article Handling, subclasses 222.01+, for apparatus for charging a load holding or supporting element from a source, and means for transporting the element to a working,

treating, or inspecting station, which station may be a press, and subclasses 267+ for charging a plurality of, or discharging a plurality of, static, load underlying members (e.g., racks, shelves, troughs, etc.), which plural members may be nominally claimed pressing surfaces.

197 This subclass is indented under subclass 196. Apparatus in which the material to be compacted is granular or flowing in nature.

198 This subclass is indented under subclass 196. Apparatus having means for freeing the compressed mass from the pressure surface or for removing it from the support on which it was carried during the compression.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 218, for reciprocating platen presses having means for removing material from the means which supports the material during pressing.

199 This subclass is indented under subclass 194. Apparatus having means by which the several pressure surfaces of the stack are located relative to one another or individually supported.

200 This subclass is indented under subclass 199. Apparatus in which the plates are connected by pivotally mounted elements.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 114, for stacked box or plate type presses in which the boxes or plates are flexibly connected and there is drainage through or along a pressure surface.

202 This subclass is indented under subclass 194. Apparatus in which the pressure surfaces are pivotally connected together.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 296, for platens, per se, in which there are two platens which are flexibly connected.

- 203** This subclass is indented under subclass 194. Apparatus in which in each pair of pressure surfaces there are material retaining side walls around one of the pressure surfaces so as to constitute a chamber and the other pressure surface moves between the sidewalls as the pressure surfaces are brought together.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
240, for reciprocating presses of the box and piston type.
- 204** This subclass is indented under subclass 203. Apparatus in which the pairs of pressing surfaces have means to secure them in fixed relation with the material under compression after the relief of the compression actuating force.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
219, for reciprocating platen presses having means to lock the platens in position with the material compressed between them.
- 205** This subclass is indented under subclass 203. Apparatus in which the chamber has openings through the bottom or a sidewall through which access may be had to the interior of the box.
- (1) Note. The openings are usually for the purpose of removing or loosening the compacted material contained within the compression chamber.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
112, for expressing presses having drain means for the expressed liquid and having means to clear or clean a duct passing through or along the pressure surface.
- 206** This subclass is indented under subclass 203. Apparatus in which the compression chamber is made up of sections which may be taken apart from one another.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
246+, for reciprocating press construction of the box and piston type in which the box is made up of movable or removable sections.
- 207** This subclass is indented under subclass 193. Apparatus having means for bodily removing material from one of the pairs of opposed pressure surfaces and causing it to be moved to another of the pairs of opposed pressure surfaces.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
138, for plural diverse presses in which at least one of the presses conveys while pressing the material, the conveyance frequently being to a subsequent press and sometimes the compaction being in one press with conveyance to a second place through which the material is conveyed during compaction.
140, for plural diverse presses of which at least one press conveys while pressing and there is loading from another type press by transfer.
215+, for reciprocating platen presses having means to deposit the material on the means which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.
218, for reciprocating platen presses in which there is means to remove the material from the means which supports the material during the compacting operation.
221, for reciprocating presses having plural or indexing material supports.
229, for reciprocating presses in which the work support may be displaced to or from position opposing the pressing element.
- 208** This subclass is indented under subclass 193. Apparatus in which the movable pressure surfaces of at least two pairs of compressing surfaces are actuated or forced to move at the same time.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
236, for reciprocating presses of the oscillatory or hinged platen type having pairs of opposed platens.

- 209** This subclass is indented under subclass 208. Apparatus in which the actuation of one movable pressure surface of one pair in compaction would necessarily involve the removal or return from the compaction of the movable pressing surface of the other pair of compressing surfaces.

SEE OR SEARCH CLASS:

- 68, Textiles: Fluid Treating Apparatus, subclass 116 for machines for squeezing textiles wherein a plurality of squeezers are mounted on a horizontal axis and are provided with opposed squeezing faces cooperating with two opposed walls of the tub, subclass 118, wherein a single squeezer having a pair of squeezing members is mounted on a horizontal axis and is provided with opposed squeezer faces which cooperates with opposed beds, and subclass 121, for squeezing machines with a squeezer having a substantially rectilinear motion the squeezer being provided with opposed squeezer faces cooperating with opposed beds or walls of a tub.

- 210** This subclass is indented under the class definition. Apparatus in which material is compacted between a solid surface and a body of continuous periphery having rolling motion relative thereto.

- (1) Note. This subclass includes devices in which the roll axis sweeps in a circular path so that the rotation of the roll on its axis is planetary in nature. In such devices the solid surface relative to which the roll rotates is usually dish or conical in shape.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 67, for pressing devices for compacting ensilage within a silo which devices employ rollers which are guided by the side wall of the silo.
- 68, for pressing devices for compacting ensilage within a silo employing rollers for compressing which rollers are guided by a vertical post centrally of the silo.

- 86, for presses which additionally treat the material in which the additional treatment involves winding a sheet, web, or strand on a mandrel with an opposed presser roll.
- 89, for presses which treat the material by winding it within a cage of rolls.
- 121, for presses with drain means for expressed liquid in which the drainage is through or along a movable pressure surface of the roll type.
- 156, for concurrent pressing and conveying presses of the roll type in which a roll coacts with a nonrotary press element.

SEE OR SEARCH CLASS:

- 7, Compound Tools, subclass 111, for a pastry rolling pin which is convertible to another device or which is combined with a diverse device.
- 12, Boot and Shoe Making, subclass 34, for machines for laying or leveling shoe soles in which the shoe is held on a support and the sole is subjected to pressure by a rotating roll with the roll moving relative to the sole along the length of the sole.
- 65, Glass Manufacturing, subclasses 256+, for a similar apparatus for rolling glass; and see the "Search Notes" thereunder.
- 68, Textiles: Fluid Treating Apparatus, subclasses 102+, for machines in which a textile is squeezed while subjected to a liquid and the squeezing machine is of the roller type wherein the roll translates rectilinearly and cooperates with a bed.
- 69, Leather Manufactures, subclass 45, for apparatus for the treatment of leather by the use of a tool which is pivoted about a point external from the tool and the tool turns upon the pivot during treatment of the leather.
- 72, Metal Deforming, appropriate subclasses, for an apparatus which deforms work between a roller means and an anvil means, particularly subclasses 91+, for a fixed axis roller and concave surface, and subclasses 214+, for a movable axis roller and fixed anvil means.

- 99, Foods and Beverages: Apparatus, subclass 457, 464 and 466, for a rolling surface working dairy food; subclasses 557+, for a roller or belt contacting another member to press seeds from food; and subclass 575, for adjacent surfaces that separate the shell from food, one surface of which rotates.
- 101, Printing, subclass 269, for bed and cylinder printing presses in which a cylinder is given a bodily movement along the bed.
- 241, Solid Material Comminution or Disintegration, subclasses 84+, for a comminutor surface having openings and cooperating surface whereby the material being comminuted is forced through the openings.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 374, for shaping apparatus comprising a roll and platen.
- 452, Butchering, subclass 143 for meat tenderers in which a roll coats with a plate.
- 492, Roll or Roller, subclass 14 for a rolling pin or pastry roller, per se.
- 211** This subclass is indented under the class definition. Apparatus in which one of the pressure surfaces is bendable.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 122+, for presses with drain means for an expressed liquid and there is a textile containing pressure surface.
- SEE OR SEARCH CLASS:
- 12, Boot and Shoe Making, subclass 38 for dies and formers for shoe sole laying and leveling machines which may be rigid, resilient, inflatable, or deformable (such as a flexible bag full of a liquid).
- 34, Drying and Gas or Vapor Contact With Solids, subclass 146, for drying devices of the stationary press type having nonplanar press couples.
- 38, Textiles: Ironing or Smoothing, subclasses 25+, for smoothing machines wherein the work is smoothed between platens and it is necessary to move both press platens one of which may be a bag wall, the bag being inflated to exert the pressure.
- 68, Textiles: Fluid Treating Apparatus, subclass 96, for machines in which a textile is squeezed while subjecting it to a liquid and the squeezing is by a receptacle deformable to effect a squeezing action on the textile, and subclass 242, for wringers for pressing or removing liquid from a material which effect the removal of liquid from textiles by pressure applied to a diaphragm which presses against the textiles.
- 72, Metal Deforming, subclasses 54+, for metal deforming apparatus including a fluent tool means, and, subclasses 382, and 396+, for die-shaping apparatus having a yieldable tool or tool face portion.
- 144, Woodworking, subclass 256.1, for a machine for bending wood to a desired form by compressing it between formers or dies which may embody an integral convex former and a flexible former, subclasses 263 to 266, for a machine for bending wood about a fixed former which comprises a windlass connected with the ends of a strap which is drawn against the wood and forces it against the former, and, subclass 268, for a machine for bending wood which comprises a revolving former to which one end of the wood to be bent is secured and which, as the former is rotated, draws the wood closely there-around and employing a flexible apron which presses the wood firmly against the cylinder or former.
- 162, Paper Making and Fiber Liberation, subclasses 401+ for pulp molding devices having a pressing diaphragm composed of elastic material.
- 222, Dispensing, subclass 214 for resilient wall dispensers having wall deflecting means and subclass 386.5 for dispensing containers with a nonrigid follower discharge assistant.
- 212** This subclass is indented under subclass 211. Apparatus in which material is compressed within a bendable filament, strand or band by

contracting it around the material by endwise pulling.

- (1) Note. This subclass includes binder chain wires and cords equipped with means to support them from the ground or support them from an element penetrating the material whether or not the binder chain wire or cord is equipped with means to tighten the binder chain or cord around the material.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 1+, for devices for disposing a flexible binder tightly and circumferentially closed around the material.
- 278, for reciprocating platen presses having a flexible element actuator for the platen.

- 213** This subclass is indented under the class definition. Apparatus in which one of the pressure surfaces has a projection on it which is received within a cavity in the other pressure surface, the material compacted being contained within and lining the cavity and surrounding the projection.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclasses 343+, for a reciprocating die press for deep drawing or forging a metal workpiece between a male die and a closed periphery female die.

- 214** This subclass is indented under the class definition. Means including opposed pressure surfaces and means moving at least one of the surfaces to cause it to approach the opposing surface to compress material therebetween.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 116, for presses with drain means for expressed liquid along or through a pressure surface and the surface is a movable piston or platen.
- 141, for plural diverse presses in which at least one of the presses conveys while pressing and such press is loaded by a transversely moving platen or packer.
- 178, for concurrent pressing and conveying presses in which the conveying is by

means of a moving compression chamber and the compression involves a piston or platen type press. for plunger type concurrent pressing and conveying presses.

179,

SEE OR SEARCH CLASS:

- 15, Brushing, Scrubbing, and General Cleaning, subclass 261, for mop wringers in which the mop is squeezed between flat boards or plates.
- 29, Metal Working, subclass 251, for assembling and disassembling apparatus having means for engaging two work parts to be assembled or disassembled and means for multiplying the force input to the apparatus where the apparatus is of the arbor press type.
- 34, Drying and Gas or Vapor Contact With Solids, subclasses 143+, for apparatus for removing liquid from material in which the material to be treated is held between two opposed members which are movable or expansible toward one another to press or retain the material, and away from each other to release the material.
- 38, Textiles: Ironing or Smoothing, subclasses 17+, for smoothing machines wherein the work is smoothed between platens, and subclass 71, for implements involving simple elemental devices for effecting pressure between the platens.
- 65, Glass Manufacturing, subclasses 305+, for a press molding machine; see the "Search Notes" thereunder.
- 68, Textiles: Fluid Treating Apparatus, subclasses 113+, for squeezing machines for squeezing textiles while subjected to a only of a pair of members between which the pressure is effected, is moved and, subclasses 241+, for wringers for removing the liquid from textiles by pressing.
- 69, Leather Manufactures, subclass 48, for apparatus for treating leather in which opposing forces are brought to bear upon the leather which tend to compress the leather.

- 83, Cutting, subclasses 523+, and particularly subclasses 531+, indented thereunder, for a clicker die press or other device having a reciprocable tool or platen.
- 99, Foods and Beverages: Apparatus, subclasses 557+ and 559+, for punch type seed removers; and subclasses 572+, and 577-583, for shell separators having presser members.
- 101, Printing, subclass 134.5, for bed and platen copying apparatus having opposed members capable of relative movement toward each other to make the impression by nonrolling contact where there is a printing surface bearing designs in ink of such nature as not to require reinking and subclasses 287+, for machines comprising two opposing pressure members so constructed as to contact simultaneously at all points with the work held therebetween thereby effecting a nonrolling impression.
- 131, Tobacco, subclasses 111+, for apparatus for making tobacco plugs of compressed shapes.
- 144, Woodworking, subclasses 256.1+, for machine for bending wood to desired form by compressing it between formers or dies.
- 164, Metal Founding, subclasses 169+, for sand compacting mold making means and, particularly subclasses 207+, for press type compactors.
- 222, Dispensing, subclass 386, for dispensing containers having a follower type discharge assistant.
- 269, Work Holders, subclasses 86+, for patents to a device with relatively movable jaws to grip an object while being treated. See section VIII under the class definition of Class 269 for the line with respect to Class 100.
- 384, Bearings, subclasses 7+, for linear bearings.
- 410, Freight Accommodation on Freight Carrier, subclasses 121+, e.g., for squeeze-type brace structures of indented subclass(es) 123+, and the wall-to-lading structures of indented subclass 128 in which a brace structure applies pressure against lading on a freight carrier.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 394+, for a preform reshaping or resizing means or vulcanizing means compressing coacting press surfaces, and subclasses 406+, for means shaping a mass comprising opposed press members; see the search notes thereunder.
- 452, Butchering, subclass 144 for meat tenderers having plates provided with projections to mash the meat therebetween.
- 215** This subclass is indented under subclass 214. Apparatus having means to convey or conduct material to be compacted to place the material on a surface which supports the material during the compacting operation.
- (1) Note. The support is usually a platen or a box bottom but it is not limited thereto.
- (2) Note. The depositing means claimed in combination with the press may be a mere chute.
- SEE OR SEARCH THIS CLASS, SUBCLASS:**
- 7, for apparatus having means for placing material on or removing it from a means which supports the material during the disposing of a flexible filament, strand, or band tightly and circumferentially closed around the material.
- 45, for presses having automatic or material trigger control of material addition, depositing, or displacing.
- 49, for presses with automatic or material triggered control of the actuating means in which the press actuation is started by material presence of position.
- 55, for apparatus for applying the lids to portable receptacles and having means to transfer the receptacle to be lidded to or from the press.
- 66, for apparatus for compacting ensilage within a silo combined with means for depositing or distributing the material within the silo.
- 71, for presses having means to deposit material into the press which material

- is added to other material for the purpose of changing a physical or chemical characteristic of the material as pressed.
- 77, for apparatus having means to wind or fold a sheet, web or strand and deposit such wound or folded article into a press for repressing.
- 137+, for plural diverse presses one of which usually deposits the material in the other press.
- 138, for plural diverse presses in which at least one of the presses concurrently conveys the material while pressing.
- 152, for endless conveyor type concurrent pressing and conveying presses having means for charging or discharging the material on the conveyor.
- 173+, for roller type concurrent pressing and conveying presses having means for handling or guiding the material to or from the rollers.
- 188, for plunger type concurrent pressing and conveying presses having means for feeding or discharge handling.
- 196+, for plural presses of the nature of stacked boxes or plates with means for loading material into or taking it from the boxes or plates.
- 207, for plural presses having means to transfer the material compressed by one press to a second press.
- 221+, for presses having plural boxes or platen portions each of which acts as a pressure surface as they are brought successively under a plunger.
- 229, for presses in which the box or platen acting as a pressure surface is movable from a position under a plunger or piston in a direction other than the compressing direction and may be loaded while displaced in such direction.
- 232, for presses in which one platen moves material into position between other platens for compression between them.
- SEE OR SEARCH CLASS:
- 38, Textiles: Ironing or Smoothing, subclasses 7+, for smoothing machines having a movable device for transferring the article smoothed to, through, or from or back to the front of the machine.
- 65, Glass Manufacturing, subclasses 207+, especially subclass 223, for glass molding apparatus combined with means charging glass thereto; see the "Search Notes" thereunder.
- 72, Metal Deforming, subclass 405, for a forging press having plural tool couples and means to feed work between them.
- 83, Cutting, appropriate subclasses for cutting devices which include means to move work.
- 99, Food and Beverages: Apparatus, subclass 373, for cooking devices having two imperforate movably connected heated plates or mold sections adapted to be positioned so as to confine and contact food material therebetween and including means to supply uncooked material to the cooking surfaces.
- 131, Tobacco, subclass 81, for cigar and cigarette making machines having means for molding or forming the tobacco combined with a feeder for the tobacco or a tobacco bunch to the machine.
- 141, Fluent Material Handling, With Receiver or Receiver Coacting Means, appropriate subclasses for filling receivers with fluent material.
- 221, Article Dispensing, appropriate subclasses, and especially subclasses 191+, for article dispensers, not otherwise classified, for delivering articles to a stationary article support. See the reference to Class 221 in Lines With Other Classes, Binding and Pressing Elsewhere Classified and Press Sub-combinations, of the class definition of this class (100).
- 222, Dispensing, appropriate subclasses, and see references to Class 222 in the class definition.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 256+, for a female mold and means to feed measured charges of fluent material thereto; see the search notes thereunder.

- 216** This subclass is indented under subclass 215. Apparatus having means interrelating the pressure surface moving means and the placement means such that on termination of the placement movement the moving means becomes effective to move the pressure surface.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 45, for apparatus in which a means sensitive to the amount of material added by the feeder controls the plunger actuation.
- 217** This subclass is indented under subclass 215. Apparatus having a walled receptacle for receiving the material to be compressed and a means which moves across the open end of such receptacle to distribute the material within the receptacle as it brings the material into position over the receptacle.
- 218** This subclass is indented under subclass 214. Apparatus having means to remove the compressed material bodily from a means supporting the material during pressing.
- (1) Note. Where one of the pressure surfaces is a piston telescoping within a box, and the piston, by continued motion in the same direction as it moved in the compressing motion, moves the material out of the box, search this class, subclasses 240+ particularly subclasses 244 and 247.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 7, for binding machines having means for discharging material from the support which bears the weight of the material during the application of the binding member thereto.
- 45, for presses having automatic or material triggered control of the displacing of material from the press.
- 55, for portable receptacle lid applying presses having means to transfer the receptacle from the pressing device.
- 76+, for presses which form a sheet or web and discharge it so as to wind or fold the sheet.
- 104+, for presses with drain means for conducting the expressed liquid, particularly 106, for presses having drain means for an expressed liquid or for a liquid pressed from the material during the compacting and having means to propel the liquid.
- 138, for plural diverse presses in which one press discharges into another press.
- 144+, for a press which as it presses conveys the material from one opening to another the moving press element usually acting as the conveying and discharging means, particularly subclasses 152, for an endless conveyor type concurrent pressing and conveying press having means for discharging the material from the conveyor, subclass 173 for a roll type concurrent pressing and conveying press having means for handling or guiding the material, particularly, subclass 174 for such press having means to strip the material from the rolls, and subclass 188 for a plunger type concurrent conveying and compressing press having means for handling the discharge from the press.
- 196, for plural presses comprising stacked boxes and having means to discharge material from the boxes.
- 207, for plural presses having means to transfer or discharge the material from one press and place it into the other.
- 240+, see (1) Note above.
- SEE OR SEARCH CLASS:
- 29, Metal Working, subclasses 771+ for apparatus for assembling work pieces by pressure which require no manual operation other than placing the work parts in or removing them from the machine the operations of assembling or disassembling being without manual operation and, subclasses 809+, for assembling apparatus having a magazine for the work from which the work is fed to be operated upon by apparatus which may press work pieces together.
- 72, Metal Deforming, subclasses 344+ and 426+, for a reciprocating press with a product removal means.

- 83, Cutting, subclasses 78+ for product handling means associated with cutting apparatus, and, particularly subclasses 109+ indented thereunder, for means to move or guide movement of the product.
- 99, Foods and Beverages: Apparatus, subclass 373, for cooking apparatus including two movable connected heated plates adapted to be positioned so as to confine and contact the food material therebetween and having means for withdrawing or facilitating the withdrawal of the food material from both cooking surfaces.
- 131, Tobacco, subclass 82, for cigar and cigarette making machines having means for molding or forming the tobacco combined with a bunch remover and/or transfer device.
- 164, Metal Founding, subclasses 180+ and 213+, for sand mold shaping means having means to remove shaper from product, subclasses 344+, for metal casting means with product ejector, and, subclasses 401+, for strippers or ejectors, per se.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 255, for shaping apparatus comprising a mold, pallet handling means arranged to eject the product and charging means, and subclass 443, for means ejecting a product from a mold comprising a movable mold bottom or wall.
- 219** This subclass is indented under subclass 214. Apparatus having means in addition to the pressure surface actuating means for securing the pressure surface against motion relative to the opposed pressure surface either in a position where the press is empty or in a position in which the material compressed is held in compacted condition between the pressure surfaces.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 78, for presses which wind or fold a sheet, web or strand and have means to retain the material in the folded or wound shape.
- 204, for box or pot type stacked box plural presses having means to lock the compressing surfaces with the material compacted between them under compression.
- 220, for apparatus for restraining the compacted material within the press other than some means to hold the platen.
- 274, for intermittent actuators which move the platen step by step in the compressing direction and a means for arresting the restoring motion of the platen between steps.
- 220** This subclass is indented under subclass 214. Apparatus having means contacted by the material as compacted and separate from the pressure surfaces, which means holds the material in its compacted condition against expansion upon withdrawal of the movable pressure surface.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 78, for presses which additionally treat the material by winding or folding a sheet, web, or strand and which have means to retain the material in the wound or folded state.
- 187, for plunger type concurrent pressing and conveying presses in which a tube through which a plunger forces material is equipped with a means to restrain rebound of the material as the plunger is retracted.
- 219, for apparatus in which the rebound of the material is prevented by locking the platen in position.
- 221** This subclass is indented under subclass 214. Apparatus having either (1) multiple supports or supporting areas each bearing discrete portions of material to be compressed by a single opposing pressure surface or, (2) a support having plural areas for a single mass of material and means whereby the support and an opposed single pressure surface may be relatively shifted laterally for compressing different portions of the single mass of material at successive or alternative offset locations.
- (1) Note. This subclass includes platens or boxes which can be shifted transversely to alternative compression positions for

the compression of different portions a single mass of material at successive or alternative offset locations.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 65+, for a platen shifting across the top of a silo contents between successive compressive strokes.
- 215, for presses having means to place the material upon the support portions which carry the weight of the material during the compacting operation and see the notes thereto for other presses having material charging or handling means.
- 229, for single material supports displaceable transversely of the direction of platen movement.

SEE OR SEARCH CLASS:

- 12, Boot and Shoe Making, subclasses 36+, for shoe sole laying and leveling machines having multiple work supports for the shoes being operated upon.
- 65, Glass Manufacturing, subclasses 308+, for glass working press molding apparatus comprising a plunger coacting with successively presented molds.
- 68, Textiles: Fluid Treating Apparatus, subclass 123, for machines for squeezing textiles while subjected to a liquid in which the squeezer element only of a pair of members, between which pressure is effected, is moved and the squeezer has a substantially rectilinear vertical motion and in which the squeezer is displaced, or in which means are provided to facilitate displacement of the squeezer, while out of pressure engagement with the textiles, to cause the succeeding squeezing actions to be at different positions in the tub.
- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 44+, 69+, and 89+ for a cutting machine of that class type combined with an indexing material support.

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 357+, for a single press member coacting with plural female molds.

- 222** This subclass is indented under subclass 221. Apparatus in which the supporting areas are on an endless flexible web member which carries them successively to position opposing the single pressure surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 215, for reciprocating platen presses having means to deposit the material on the means which supports the material during the compacting operation and see the notes thereto for other presses having material depositing means.

SEE OR SEARCH CLASS:

- 38, Textiles: Ironing or Smoothing, subclass 10, for devices in which there is a conveyor belt for moving material into the pressing zone and in which there are opposed pressing elements which are platens.
- 131, Tobacco, subclass 87 for cigar and cigarette making machines having means to mold or form the tobacco in which the mold is mounted upon an endless carrier there being plural molds.

- 223** This subclass is indented under subclass 221. Apparatus in which the supports or support areas are carried by a member which moves them in a circular or swinging orbit to carry them successively to position opposing the single pressure surface.

SEE OR SEARCH CLASS:

- 12, Boot and Shoe Making, subclass 37 for shoe sole laying and leveling machines having multiple work supports in which the work supports are held on a turret or wheel rotating about a single fixed axis to move the work supports past a loading and pressure applying station or zone.
- 29, Metal Working, subclasses 35.5+ for rotatable tool holders.

- 68, Textiles: Fluid Treating Apparatus, subclass 111, for machines in which a textile is squeezed while subjected to a liquid and there is a tub which is displaceable about a vertical axis to position successive portions of a batch of textiles beneath a vertically reciprocable squeezer.
- 74, Machine Element or Mechanism, subclasses 813+ for assemblies with means to turn a shaft or rotatably mounted device about its axis to one or more selected loci including means to prevent or hold against rotation at such loci.
- 131, Tobacco, subclass 87 for cigar and cigarette making machines in which molds for forming the tobacco are carried upon a rotary member, there being plural molds.
- 164, Metal Founding, subclasses 325+ for metal casting apparatus wherein plural molds are carried by a rotating table or wheel.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 453+ for a female mold and dynamic support or dynamic carrier therefor; see the search notes thereunder.
- 224** This subclass is indented under subclass 221. Apparatus in which the multiple supports or support areas are translated to move successively to position opposing the single pressure surface.
- 225** This subclass is indented under subclass 221. Apparatus in which the multiple supporting areas are formed by walls extending across between the side walls of a chamber so as to separate various charges of material within the chamber.
- 226** This subclass is indented under subclass 214. Apparatus in which the movable pressure surface can be additionally moved transversely of the compressing direction.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 63, for portable receptacle lid applying presses in which approaching arms embrace the receptacle, the arms usually being the movable platen and displaceable to a nonuse position endwise of a box to be lidded.
- SEE OR SEARCH CLASS:
- 38, Textiles: Ironing or Smoothing, subclasses 32+, for platen presses wherein there are but two platens, one of which is movable and a platen is moved in an orbital path about a fixed axis and in a rectilinear horizontal path to effect a smoothing operation, and subclasses 34+ for platen presses in which there are two platens, one of which is movable and the platen is moved in both an orbital path about a fixed axis and in a rectilinear vertical path to effect a smoothing operation.
- 72, Metal Deforming, subclasses 353+, 381+, 393, and 394+, for a reciprocating metal shaping press utilizing a tool-complex, i.e., three or more coacting relatively moving tools or segments, and subclass 406 for a press in which a tool has a compound motion.
- 99, Foods and Beverages: Apparatus, subclass 376, for cooking apparatus including two movably connected heated plates opposed to one another to confine food material therebetween and having means for laterally detaching the cooking surfaces from their support.
- 164, Metal Founding, appropriate subclasses for roll or rock-over type mold pressing machines, particularly subclasses 169+.
- 227** This subclass is indented under subclass 226. Apparatus in which the movable pressure surface has means for mounting it upon a box, barrel or other means for holding the material during later transportation.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 59, for portable receptacle lid applying presses which are mountable upon the receptacle to be lidded.
- 132, for presses with drain means for an expressed liquid which have a liquid collector or receptor and the press is demountably supported thereon.

- 228** This subclass is indented under subclass 226. Apparatus having means for mounting the movable pressure surface so that a cross member carries it and such cross member may be swung or disconnected from the stationary pressure surface.
- 229** This subclass is indented under subclass 214. Apparatus in which a material receiving pressure surface having side walls to form a chamber or a pressure surface which does not move during the compacting operation are movable to a nonuse position transversely of the direction of application of the compacting force or of the line of approach movement of the compressing surfaces.
- (1) Note. The material receiving pressure surface is not actuated during the compression operation but moves transversely of the direction of compressing motion in order for the patent to be classified in this subclass.
 - (2) Note. In the devices here classified the box bottom and frame must move as an entirety. For devices in which the box bottom or the box frame moves separately search this class, subclasses 246+.
 - (3) Note. The displacement of the box to nonuse position is generally for the purpose of placing material upon the box or platen. Where means are provided for moving the material into such loaded condition of the box see this class, subclass 215.
 - (4) Note. This subclass includes compression of material within a box, barrel or bag or other portable receptacle where there is no lid applied or where the material to be compressed is not carried from outside the receptacle to position within the receptacle. Where the compression within the receptacle. Where the compression within the receptacle is by means of a lid for the receptacle search this class, subclasses 54+. Where material is carried from without the receptacle to position within it search Class 141, appropriate subclasses. The inclusion of a funnel or loading device directing or guiding the material into the container renders the device one for Class 141. Note particularly Class 141, subclasses 71+, for compacting material within the receptacle during filling.
 - (5) Note. This subclass includes compacting of material within portable receptacles by a reciprocating platen. Auger or revolving screw devices for the purpose of compacting material within the receptacle having been deemed filling devices for Class 141 as they transport material from outside the receptacle to a position within it.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 54+, and see (4) Note above.
- 133, for presses with drain means for expressed liquid which are demountably supported upon a drinking receptacle.
- 194, for plural presses of the stacked box or plate type such boxes or plates frequently being removable from the press.
- 215, and see (3) Note above.
- 221+, for plural or indexing material supports displaceable transversely to the nonuse position.
- 246, and see (2) Note above.
- SEE OR SEARCH CLASS:
- 99, Foods and Beverages: Apparatus, subclass 376, for cooking apparatus having two movably connected heated plates adapted to be positioned so as to confine and contact food material therebetween and having means for readily detaching the cooking surfaces from their support.
- 101, Printing, subclass 316, for bed and platen printing machines in which the printing member moves in a straight path, the printing member being the bed of the machine.
- 141, Fluent Material Handling, With Receiver or Receiver Coacting Means, subclasses 71+, and see (4) Note, above. In addition, it is observed that subclass 73 thereof includes a collection of packing augers, per se.

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 452, for a female mold and pallet handling means in which a filled mold may be carried away from a press after filling; see the search notes thereunder.
- 230** This subclass is indented under subclass 214. Apparatus in which the movable pressure surface surrounds and is moved along a tension rod which is located medially of the movable pressure surface, the tension rod taking the reactive force of the compression operation.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 289, for screw and nut actuated reciprocating platen presses in which the screw rod is not located centrally of the platen.
- 231** This subclass is indented under subclass 214. Apparatus having a frame supporting a pressure surface and an opposed cantilever portion of the frame supporting a pressure surface, the reaction force of the compression operation being a thrust against the cantilever support and the opposed frame portion.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 64, for portable receptacle lidding presses in which the movable pressure element projects over the bed of a box or receptacle supporting surface.
- 232** This subclass is indented under subclass 214. Apparatus having three or more pressure surfaces at least two of which are movable along paths in different directions and which act either simultaneously to co-compress the same material or sequentially so that one moving platen recompresses material compressed and held compressed by another moving platen.
- (1) Note. This subclass includes wool press tables which have upwardly swinging hinged ledge leaves as one pair of platens. For such devices in which the leaves have means to carry with them a binder card, search this class, subclass 16.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 16, and see (1) Note above.
- 42, for methods of pressing in which there are successive compressions from different directions.
- 215, for reciprocating platen presses of the box and piston type where there are means to place the material to be compressed on the means which supports the material during the pressing operation.
- 240+, for box and piston type presses in which a side of the box may be removable as on hinges but in which the movement of such side does not have a compressing function.
- SEE OR SEARCH CLASS:
- 38, Textiles: Ironing or Smoothing, subclasses 21+, for smoothing machines wherein the work is smoothed between platens and where there are three or more press elements.
- 233** This subclass is indented under subclass 214. Apparatus in which the movement of one pressure surface to approach the other is an arcuate or swinging motion.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 16, for binder applying devices in which a swinging jaw carries a binder about the material, such jaw being a gripping jaw for the material.
- 250, for box and piston presses in which the box bottom and its frame may be separated from each other by the swinging motion upon a pivot.
- SEE OR SEARCH CLASS:
- 38, Textiles: Ironing or Smoothing, subclasses 36+, for smoothing machines wherein the work is smoothed between platens and there are but two platens, one of which is movable and such platen moves in an orbital path about a fixed axis to effect the pressing action.
- 68, Textiles: Fluid Treating Apparatus, subclasses 117+ for machines which squeeze textiles while subjected to a

- liquid and in which the squeezer member only of a pair of members is moved and the single squeezer is mounted on a horizontal axis and cooperates with a bed.
- 101, Printing, subclasses 297+ for bed and platen printing machines in which the path of approach of the bed and platen to printing position is in an arc intersecting the surface to be printed upon.
- 164, Metal Founding, subclass 211 for press type sand mold compactors having a swinging press head.
- 234** This subclass is indented under subclass 233. Apparatus in which each of the pressure surfaces has a handle and the pressure surfaces are caused to move relative to one another by the pivotal motion of the handles.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 243, for plier type box and piston presses.
- SEE OR SEARCH CLASS:
- 81, Tools, subclasses 300+, for tools of the plier type.
- 241, Solid Material Comminution or Disintegration, subclass 169, for apparatus in which comminution is effected by cooperating surfaces which reciprocate relative to each other and in which the device is adapted to be supported in the hand during operation.
- 235** This subclass is indented under subclass 234. Apparatus having a sharp penetrating spit like member for piercing the material and holding it in position to be compressed.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 94, for presses having additional means to cut, break, pierce or comminute the material.
- 236** This subclass is indented under subclass 233. Apparatus in which the platens are divided along the pivot axis into several pressing areas which crimp the material at spaced points and move parallel to one another when actuated.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 193+, for plural presses not co-compressing the same material.
- 237** This subclass is indented under subclass 214. Apparatus in which a single mass of material is compressed by plural movable pressure surfaces moving in parallel paths toward a single opposing pressure surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
- 61+, for portable receptacle lid applying presses having a movable platen which presses spaced areas of the lid concurrently, the movable platen sometimes being in the form of a plurality of pressure surfaces.
- SEE OR SEARCH CLASS:
- 38, Textiles: Ironing or Smoothing, subclass 20, for smoothing machines wherein the work is smoothed between platens and one of the press platens is sectional and has parts which are adjustable with respect to the other parts of the platen.
- 68, Textiles: Fluid Treating Apparatus, subclass 124, for squeezing machines in which the squeezers are of the vertically rectilinearly reciprocating type and in which there are a plurality of squeezers acting successively on a batch of textiles.
- 72, Metal Deforming, subclass 404, for a plural tool-couple metal shaping apparatus, and see the notes thereunder.
- 164, Metal Founding, subclasses 172+, for sand mold compacting apparatus employing plural rammers.
- 234, Selective Cutting (e.g., Punching), for a machine in which a series or gang of punches is employed, and from which series any number or set may be selected (by the operator or by a pattern) to perforate a design or an array of code symbols.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 343, for plural spaced reshaping means or vulcanizing means acting on

a single preform, subclass 356 for plural shaping plungers coacting with a single female mold, subclass 421, for a male-female shaping couple with a tamp rod, and subclass 431, for a female mold and tamp rod combination.

- 238** This subclass is indented under subclass 214. Apparatus in which one pressure surface approaches the other with a straight line movement and also turns about an axis along the line of such movement.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclass 406, for a metal shaping press with means to effect compound motion of a tool, and see the notes thereto.
- 99, Foods and Beverages: Apparatus, subclasses 501+, for a rotary food entering member that has a reaming action.

- 239** This subclass is indented under subclass 238. Apparatus having a chamber, a pressure surface advancing within the chamber to exert compressing force within the chamber, means to rotate the chamber and means interconnecting the chamber and pressure surface so that the rotation of the chamber causes the pressure surface to advance within the chamber.

- (1) Note. In these devices the box is interposed in the power path of the actuating force. The actuation of the box in rotation causes concurrent rotation and compression of the material.

- 240** This subclass is indented under subclass 214. Apparatus in which there are material retaining side walls around one of the pressure surfaces so as to constitute a chamber and the other pressure surface moves between the sidewalls as the pressure surfaces are brought toward one another to apply compressive force to the material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 232, for presses having three or more platens, several of which platens may be so located as to form a box.

SEE OR SEARCH CLASS:

- 65, Glass Manufacturing, subclasses 305+ for a glass press molding machine.
- 72, Metal Deforming, appropriate subclasses, for a closed-die press for plastically shaping metal. Particularly, see subclasses 253.1+ for an extrusion machine and 347+ for a deep drawing machine, each utilizing a bottomless "through" die, and subclasses 352+ for a forging machine in which a cup-like female die entraps the shaped work.
- 131, Tobacco, subclass 119, for molds, per se, for use in molding tobacco into plugs, in plug or compressed tobacco shape making machines.
- 220, Receptacles, subclasses 578+ for an internal closure-like member which rests on the unused contents of a container.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 412+, for a press molding apparatus comprising a plunger-mold couple for plastic or fluent material not otherwise provided for; see the search notes thereunder.

- 241** This subclass is indented under subclass 240. Apparatus in which the pressure surface which moves between the side walls of the material retaining chamber has mounted circumferentially upon it edged devices which move along said side wall as said pressure surface advances into the chamber.

- 242** This subclass is indented under subclass 240. Apparatus in which the area of the cross-section of the chamber at right angles to the direction of approach of the pressure surfaces may be varied.

- 243** This subclass is indented under subclass 240. Apparatus in which the chamber and the pressure surface which enters the chamber are each equipped with a handle and these handles are movable relative to one another to cause the said pressure surface to move between the side walls of the chamber and rectilinearly approach an opposing pressure surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

234+, for plier type hinged platen or piston presses.

SEE OR SEARCH CLASS:

81, Tools, particularly subclasses 300+, for tool-jaw(s) positioned by relatively movable plural handles (e.g., pliers).

244 This subclass is indented under subclass 240. Apparatus in which the opposing pressure surfaces both enter the side walls of the chamber and both are actuated for movement between the side walls of said chamber and in the direction of said side walls.

- (1) Note. In these devices there are two movable pistons in the same box.
- (2) Note. The travel of the piston or of one of the pistons or of the box bottoms may be after the compressive force has been discontinued and the movement merely for the removal of the material from within the frame of the box. Search this class, subclass 218 for reciprocating platen presses in which the press has means for removing the material from the pressure surface.
- (3) Note. In the devices here classified both pressure surfaces are movable relative to the box frame and both are actuated. Where there is but one movable pressure surface yet the other pressure surface is removable from the box frame, search this class, subclasses 247+.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

218, see (2) Note above.

247+, see (3) Note above.

264, for reciprocating platen presses in which both platens are movable relative to one another, i.e., and each has actuating means.

SEE OR SEARCH CLASS:

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 352+, for a female mold and opposed coaxial dynamic press members coacting therewith; see the search notes thereunder.

245 This subclass is indented under subclass 240. Apparatus in which a pressure surface is so supported as to be free to move laterally if unrestrained, but is restrained in its direction of motion by the side walls of the chamber or by guiding structure associated with the chamber.

- (1) Note. In these devices the actuation is usually by a flexible connection so that the guiding restraint of the box is necessary to the correct motion of the piston, the connection being either a pivot or a rope, cable, etc.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

67, for devices for compressing material within a silo in which the side walls of the silo guide a roller type pressing means.

246 This subclass is indented under subclass 240. Apparatus in which any of the elements of the chamber, as the side walls or portions thereof, or a pressure surface which is stationary relative thereto during the application of compressive force to the material are movable relative to one another for purposes other than the application of compressive force to the material.

- (1) Note. In these devices the box parts may be movable relative to each other, that is, the bottom of the box may be separable from the side walls or the side walls movable relative to the box bottom. Where the box is movable as a unit transversely to the direction of compressive force, search this class, subclass 229.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 206, for plural presses of the stacked box type in which the box is of separable sections.
 229, See the Note, above.
- SEE OR SEARCH CLASS:
 12, Boot and Shoe Making, subclass 66 for shoe toe and heel stiffener molding machines having a separable matrix or a matrix made in sections which separate to allow the insertion or withdrawal of a stiffener carrying plunger or former.
 65, Glass Manufacturing, subclass 316, for glass press molding machine with means to rotate a plunger upon withdrawal from the mold, and subclass 317 for a reciprocating or oscillating female mold; see the "Search Notes" thereunder.
- 247** This subclass is indented under subclass 246. Apparatus in which the pressure surface which is stationary relative to the chamber during the application of compressive force to the material and the side walls of the chamber are relatively movable for purposes other than the application of compressive force.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 244, for box and piston presses in which the box bottom is a piston, that is, the box frame contains two pistons.
- 248** This subclass is indented under subclass 247. Apparatus in which the chamber contains a movable or removable pressure surface supported by another surface which may act as a surface for compression is not supplemented by the removable pressure surface.
- 249** This subclass is indented under subclass 247. Apparatus in which the pressure surface which is stationary during the application of compressive force and the side walls of the chamber are relatively movable and have associated therewith surfaces which direct such relative movement during the separation of said surface from the side walls of the chamber.
- 250** This subclass is indented under subclass 249. Apparatus in which the surfaces which direct the relative motion of the pressure surface and the side walls of the chamber include means mounting them for relative swinging motion.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 233+, for presses in which the piston has a swinging motion during the compression stroke.
- 251** This subclass is indented under subclass 249. Apparatus in which the surfaces which direct the relative motion of the pressure surface and the side walls of the chamber include means to direct relative movement in the direction of the compressive force.
- 252** This subclass is indented under subclass 246. Apparatus in which the side walls forming the chamber, or portions thereof, may be separated from each other.
- SEE OR SEARCH CLASS:
 249, Static Molds, subclasses 160+, for a static mold comprising plural mold sections.
 292, Closure Fasteners, appropriate subclasses for bolt elements and latching devices, not combined with lock structure for securing any closure element in closed or adjusted position.
 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 441+, for a molding machine including a female mold having movable side walls or sections for product removal.
- 253** This subclass is indented under subclass 252. Apparatus in which the means which causes the pressure surfaces to reciprocate relative to one another also causes separation of the chamber side wall parts from each other.
- 254** This subclass is indented under subclass 252. Apparatus in which there is a continuing biasing force restraining movement of the chamber side wall portions relative to one another.

- 255** This subclass is indented under subclass 252. Apparatus in which the chamber side wall portions are movable relative to each other in a swing or pivotal movement.
- 256** This subclass is indented under subclass 214. Apparatus in which a pressure surface, as it moves to a predetermined position, triggers the control of the pressure surface moving means to cause the said means to stop moving the surface or to cause movement of the surface in the opposite direction.
- (1) Note. This subclass includes presses with limit switches for electric motors, limit switch structures not including press structure being classified in Class 200, Electricity: Circuit Makers and Breakers, in subclass 47.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 52, for presses having automatic or material triggered control of the movable platen actuating means and in which the pressure applied to the material causes reversing.
- 260+, for reciprocating platen presses with actuation releasing for rebounding or biased return.
- 266+, for reciprocating platen press construction in which a spring or weight exerts a return bias on the movable platen.
- SEE OR SEARCH CLASS:
- 200, Electricity: Circuit Makers and Breakers, subclass 47. See (1) Note above.
- 257** This subclass is indented under subclass 214. Apparatus in which there is means other than a force multiplier by which the locus through which the moving means actuates a pressure surface may be relocated.
- SEE OR SEARCH CLASS:
- 74, Machine Element or Mechanism, subclass 586, for longitudinally adjustable pitmans and connecting rods, per se.
- 83, Cutting, appropriate subclasses, for cutting apparatus incorporating means to vary the length or datum position of a tool stroke, and particularly subclass 525 and 527+.
- 99, Foods and Beverages: Apparatus, subclass 379, for cooking apparatus including two movably connected opposed heating plates and having provision for accommodating food materials of different thickness between the plates.
- 258** This subclass is indented under subclass 214. Apparatus having means to assure parallelism of the approaching pressure surfaces, either as an adjustment which may be made while the moving means is not operating, or as plural power paths such that motion of one portion of a movable pressure surface necessarily involves a uniform motion of another portion of said movable pressure surface.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 46, for apparatus having a sensing means for controlling the parallelism of the platens.
- 259** This subclass is indented under subclass 214. Apparatus having means resiliently receiving impact from a reciprocating pressure surface or its moving means during the movement of return from the compressing stroke.
- SEE OR SEARCH CLASS:
- 72, Metal Deforming, subclasses 431+, for a metal forging apparatus having a yieldable connection in its tool driving means.
- 260** This subclass is indented under subclass 214. Apparatus having means to move a pressure surface in a material compressing direction, said means including a force transmitting member which, after completion of the compressing stroke, continues to move in the same direction as it did when moving the surface through the compressing stroke, but has means to discontinue the transmission of moving force to free the surface to return under the influence of the compressed material or of the continuing pull of a biasing spring or weight.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 52, for presses having automatic or material triggered control of the actuating means by the pressure applied to the material which control causes reversing the platen motion.
- 256, for reciprocating platen presses in which the platen trips a trigger to stop or reverse the press.
- 266+, for reciprocating platen presses in which a spring or weight biases the platen to return from compressing position.

261 This subclass is indented under subclass 260. Apparatus in which the force transmitting member acts upon a force receiving abutment which is connected to the pressure surface and the discontinuance of the transmission of the moving force is due to the movement of the force receiving abutment across the line of direction of pressure surface motion.

262 This subclass is indented under subclass 260. Apparatus in which the discontinuance of the transmission of the pressure surface moving force is due to the movement out of contact of the teeth of a rack and pinion actuator.

263 This subclass is indented under subclass 260. Apparatus in which the discontinuance of the transmission of the pressure surface moving force is due to the movement of a force transmitting abutment from contact with a passing eccentric surface intercepted by and pushing on such abutment.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 282, for actuators in which a shaft turned cam forces a linkage joint transversely of the compression direction.
- 291, for presses having a cam actuator.

264 This subclass is indented under subclass 214. Apparatus in which both of the opposed pressure surfaces are caused to move relative to one another and to stationary elements of the apparatus by applying moving force to each of the surfaces.

- (1) Note. The moving force for one of the surfaces may be springs supporting such surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 143, for plural diverse presses in which one of the presses is of the type which conveys while pressing, and is loaded by plural transverse moving platens usually opposed to one another.
- 244, for box and piston type presses in which there are plural opposing pistons movable within the box.

SEE OR SEARCH CLASS:

- 38, Textiles: Ironing or Smoothing, subclasses 25+, for smoothing machines wherein there are two press platens and it is necessary in effecting the smoothing of a textile to move both press platens.
- 68, Textiles: Fluid Treating Apparatus, subclass 112, for machines in which a textile is squeezed while subjected to a liquid and the squeezer is provided with a pair of elements both of which are movable toward and from each other to effect the squeezing of the textiles.
- 72, Metal Deforming, subclass 259, for an opposed-plunger metal extrusion device, subclass 354, for an opposed ram closed-die forging machine, and, subclasses 399+, 403, 411, and 418, for various other opposed-ram swaging devices.
- 267, Spring Devices, subclass 1 for resilient press beds.

265 This subclass is indented under subclass 214. Apparatus in which the moving means includes a resilient member or a weight.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 69, for tampers suspended in silos.

SEE OR SEARCH CLASS:

- 72, Metal Deforming, subclasses 429+ for means to drive a tool of a forging press.

- 99, Foods and Beverages: Apparatus, subclasses 349+, particularly subclass 351, for devices for exerting pressure on the food material during a treatment thereof for cooking, such devices usually having a weight or a spring to exert the force.
- 147, Coopering, subclass 12 for machines in which the hoops are forced upon barrels by the impact of a falling weight.
- 266** This subclass is indented under subclass 265. Apparatus in which the resilient element or weight exerts a continuing force against an opposed moving means to return a pressure surface from the compressive stroke.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 52, for presses having automatic or material triggered control of the actuating means by pressure applied to the material, said control causing reversing of the direction of platen motion.
- 256, for presses of the reciprocating platen type having a platen tripped stop or reverse control of the actuation.
- 260+, for reciprocating platen presses with actuation releasing for quick return of the platen by rebounding from the elasticity of the material or due to a biasing force.
- 267** This subclass is indented under subclass 266. Apparatus in which the resilient element or weight which urges the pressing surface to return position is opposed by or acts in opposition to a flexible element which actuates the pressure surface on the compressive stroke.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 278+, for reciprocating platen presses having a flexible element actuating the platen.
- 268** This subclass is indented under subclass 265. Apparatus in which the moving means is a power transmitting means including a spring and other substantially nonresilient elements, and the power acting upon a moving pressure surface to move it on the compression stroke is transmitted through the spring, the spring being in compression.
- 269.01 Fluid pressure actuation:**
This subclass is indented under subclass 214. Apparatus in which the means to move an opposed pressure surface (i.e., platen) includes an expansible working chamber, and means to admit fluid under pressure into the working chamber to cause expansion of the working chamber.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 170, for a roll-type concurrent conveying and pressing press having fluid pressure means for yieldably mounting at least one of the rolls.
- SEE OR SEARCH CLASS:
- 29, Metal Working, subclass 252 for a pulling or pushing assembling or disassembling device having a fluid operator.
- 60, Power Plants, subclasses 325+ (and particularly 533+) for an hydraulic-type motor not combined with press structure, and see the reference to Class 60 in the class definition of Class 100 for a statement of the line.
- 72, Metal Deforming, subclasses 429+ for means to drive a tool of a metal shaping machine, and see the notes thereto.
- 83, Cutting, subclass 137 for cutting apparatus embodying a fluid pressure actuated stripper; subclasses 375, 390, 460, and 461 for cutting apparatus with fluid pressure actuated work clamp; and subclass 639 for a cutting tool reciprocated by fluid pressure means.
- 91, Motors: Expansible Chamber Type, appropriate subclasses for expansible chamber motors not combined with press structure, and see the reference to Class 91 in the Class Definition of Class 100 for a statement of the line.
- 147, Coopering, subclass 9 for a machine having an hydraulic or steam press for forcing a hoop upon a barrel.
- 164, Metal Founding, subclass 212 for a fluid pressure operated sand mold press, and subclasses 312+ for a fluid

- pressure operated metal injection machine.
- 254, Implements or Apparatus for Applying Pushing or Pulling Force, subclasses 93+ for a fluid pressure actuated implement (other than a power applying element or machine) for applying a pushing or pulling force to an object (e.g., jack, extractor, tensioning apparatus, etc.).
- 269, Work Holders, subclasses 20+ for a device having fluid means to grip work while being treated. See section VIII under the class definition of Class 269 for the line with Class 100.
- 408, Cutting by Use of Rotating Axially Moving Tool, subclass 63, 99, and 130 for a drill press in which the motor making the tool and work move relative to one another along the axis of relative rotation is operated by fluid pressure.
- 417, Pumps, appropriate subclasses for a pump, per se, for generating pressure for a fluid motor actuated press.
- 418, Rotary Expansible Chamber Devices, for a rotary expansible chamber-type pump, per se.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 389+ for a preform reshaping or resizing or vulcanizing means utilizing a fluid pressure actuated diaphragm as a press surface, and subclass 417 for a press forming apparatus including an expansible male-shaping member.
- 452, Butchering, subclass 43 for a sausage stuffer in which a reciprocating piston is actuated by a fluid motor.
- 269.02 Platen moved by elastically deformable pressure member:**
This subclass is indented under subclass 269.01. Apparatus wherein the fluid under pressure acts against a flexible member (e.g., fluid pressure actuated diaphragm) which in turn transfers force to the pressure surface.
- 269.03 Plural pressure members:**
This subclass is indented under subclass 269.02. Apparatus including more than one flexible member.
- 269.04 Inflatable bag:**
This subclass is indented under subclass 269.02. Apparatus wherein the flexible member comprises a closed envelope or pouch which expands in response to the pressure fluid.
- 269.05 Pressure intensifier:**
This subclass is indented under subclass 269.01. Apparatus wherein means are provided for pressure multiplication in a working chamber in order to amplify the total pressure supplied to the platen (e.g., pressure multiplication sleeve, pressure accumulator).
- (1) Note. The working chamber which provides the pressure multiplication feature may be separate from the working chamber in direct contact with the platen.
- 269.06 Multiple or staged driving means:**
This subclass is indented under subclass 269.01. Apparatus including plural pressure actuated moving means which operate either simultaneously or sequentially on the platen to cause it to compress material.
- (1) Note. Means acting to move the platen in the direction away from the work; e.g., a biasing return spring, is not considered to be a driving means.
- 269.07 Displacement additive:**
This subclass is indented under subclass 269.06. Apparatus wherein a driving means transmits movement to another driving means so that the total movement of the platen is dependent on the total movement of the plural driving means.
- 269.08 Pressure additive:**
This subclass is indented under subclass 269.06. Apparatus wherein more than one driving means transmits force to the platen so that the total force acting on the platen represents the sum of the forces of the plural driving means.
- 269.09 Axially aligned pistons:**
This subclass is indented under subclass 269.08. Apparatus wherein more than one of the pressure actuated driving means includes a

piston, the pistons being aligned along a common direction of movement.

269.1 Independently actuated:

This subclass is indented under subclass 269.08. Apparatus including separately actuated means to supply pressurized fluid to more than one driving means.

269.11 Pull-down press:

This subclass is indented under subclass 269.08. Apparatus including a press-supporting surface, and wherein the pressure actuated driving means are positioned below the press-supporting surface and act through connecting tie members to force the platen (located above the supporting surface) down toward the supporting surface.

269.12 Platen positioning means:

This subclass is indented under subclass 269.01. Apparatus including means to orient a pressure surface as it is moved under the force of its driving means or into operative connection with its driving means.

269.13 Pull-down press:

This subclass is indented under subclass 269.01. Apparatus including a press-supporting surface, and wherein a pressure actuated driving means is positioned below the press-supporting surface and acts through connecting tie members to force the platen (located above the supporting surface) down toward the supporting surface.

269.14 Fluid supply system detail:

This subclass is indented under subclass 269.01. Apparatus wherein significance is attributed to a pressure fluid supply system operatively connected to the working chamber.

- (1) Note. Reciprocating press structure must be claimed along with an hydraulic or pneumatic control system to be placed in this subclass.

269.15 Manually operable fluid system:

This subclass is indented under subclass 269.14. Apparatus wherein the pressure fluid supply system is provided with means for an operator of the apparatus to manually control the fluid supply system.

269.16 Particular valve feature:

This subclass is indented under subclass 269.14. Apparatus wherein significance is attributed to a valve in the fluid supply system.

269.17 Frame assembly detail:

This subclass is indented under subclass 269.01. Apparatus wherein significance is attributed to structure supporting the working chamber.

- (1) Note. The structure may provide an operative connection between the working chamber and a safety mechanism.

269.18 Rod, piston, or cylinder detail:

This subclass is indented under subclass 269.01. Apparatus wherein significance is attributed to the structure of a piston-and-cylinder-type working chamber element (i.e., the piston, piston rod, or pressure cylinder).

269.19 Cylinder position adjustment:

This subclass is indented under subclass 269.18. Apparatus wherein means are provided to move the pressure cylinder location.

269.2 Platen pivotally connected to piston or rod:

This subclass is indented under subclass 269.18. Apparatus wherein the piston or piston rod has an articulate connection to a pressure surface.

269.21 Gasket or packing around piston:

This subclass is indented under subclass 269.18. Apparatus including a sealing means surrounding the piston which is intended to act between the piston and pressure cylinder wall.

SEE OR SEARCH CLASS:

- 277, Seal for a Joint or Juncture, subclasses 434+ for a piston ring or piston ring expander or seat therefor, or subclasses 634+ for a flexible sleeve, boot, or diaphragm.

270

This subclass is indented under subclass 269.01. Apparatus in which there is in addition to the expansible chamber operating means some means for mechanically causing the movable pressure surface to act in the compressing direction.

- 271 This subclass is indented under subclass 270. Apparatus in which the means for mechanically causing movement of the pressure surface includes means for increasing the magnitude of the input force as it is transmitted to the pressing surface.
- 272 This subclass is indented under subclass 271. Apparatus in which the means for increasing the magnitude of the input force includes structure in which the input force is applied to a joint between links.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
281+, for presses having toggle actuating means.
- 273 This subclass is indented under subclass 214. Apparatus in which the moving means includes plural force transmission lines and the rate of movement of one pressure surface relative to another or the magnitude of the force applied to move one surface relative to another may be changed by employing one force transmission line rather than another.
- (1) Note. This selection is as to movement in one direction.
- 274 This subclass is indented under subclass 214. Apparatus in which the moving means includes means reacting against a fixed abutment to move a pressure surface relative thereto by which the surface is caused to move in a single direction by successive force inputs at spaced time intervals.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
219, for presses having means to lock the platens in compression position where such means are not a part of the actuating means.
- SEE OR SEARCH CLASS:
408, Cutting by Use of Rotating Axially Moving Tool, subclass 17, for drilling machines having a drill feed operated by the motor which rotates the drill and in which the transmission of the drive from the drill-spindle to the feeding means is by successive impulses with intervening pauses while the spindle rotates continuously.
- 275 This subclass is indented under subclass 274. Apparatus in which there are a plurality of means reacting against fixed abutment means and through each of which a successive timed spaced input of force may be made.
- 276 This subclass is indented under subclass 275. Apparatus in which the plurality of means acting to move the pressure surface are spaced by the length of an elongated member extending across the press and moving with the pressure surface and act upon the ends of such member to move it and the pressure surface.
- 277 This subclass is indented under subclass 275. Apparatus in which the several reacting means are joined to a common member so that the input of force through one necessarily occurs while there is no input through the other.
- 278 This subclass is indented under subclass 214. Apparatus in which the moving means includes means reacting against a fixed abutment to move a pressure surface relative thereto, which reacting means includes a rope, chain, or filament which is longitudinally tensioned while moving the platen.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
212, for presses in which the pressure surface is a circumferentially tightened band such as a rope or strand.
267, for presses having a return biasing member such as a resilient element or a weight which acts counter to a flexible compression actuator.
- SEE OR SEARCH CLASS:
72, Metal Deforming, subclass 440, for a forging press in which a drop hammer is retracted by a flexible strap.
- 279 This subclass is indented under subclass 278. Apparatus in which the reacting means is wound up on a cylinder or conical member which changes in radius for successive winds of the reacting means.

- 280** This subclass is indented under subclass 214. Devices in which the moving means includes some mechanical device interposed between a fixed abutment and a movable pressure surface for moving the surface and for increasing the pressure effect or output applied to the surface as a result of the force put into the moving means.
- SEE OR SEARCH CLASS:
72, Metal Deforming, subclasses 429+,
for means to drive a tool of a metal shaping press.
- 281** This subclass is indented under subclass 280. Apparatus in which the mechanical device includes connected links interposed between the fixed abutment and the movable pressure surface, movement of the connection between the links in a direction transverse to the direction of movement of the pressure surface resulting in an increase of the input force.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
272, for reciprocating platen presses in which a fluid pressure actuating means is combined with toggle means to actuate a platen.
- 282** This subclass is indented under subclass 281. Apparatus in which the connection is between a pitman and/or connecting rod and a cam or crank, which cam or crank is actuated in revolution by a shaft to which the cam or crank is attached.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
263, for presses in which the actuation is released for rebounding or biased return by an interruption in a rotated camming actuating surface.
291+, for reciprocating platen presses in which a cam or wedge acts directly on a platen to move it.
- SEE OR SEARCH CLASS:
83, Cutting, appropriate subclasses, for a rotary shaft-driven cutting device (often including a shaft-driven work clamp or work feed gripper) usually by cam or crank connection.
- 283** This subclass is indented under subclass 281. Apparatus in which the connection is between a lever and a link or pitman, with the leverage on the lever causing the connection to move transversely to the direction of movement of the pressure surface.
- 284** This subclass is indented under subclass 283. Apparatus in which the leverage is applied to the lever by a toothed gear sector or through a toothed gear sector which is carried by the lever.
- 285** This subclass is indented under subclass 283. Apparatus in which there are several lever and link combinations which cooperate to move the same pressure surface.
- 286** This subclass is indented under subclass 281. Apparatus having plural sets of connected links the input force in each case being applied at the point of connection to cause the links to straighten or collapse whereby a compressive action is exerted on a pressure surface.
- 287** This subclass is indented under subclass 286. Apparatus in which the several connections are simultaneously moved by screw and nut means positioned between and joining the connections.
- 288** This subclass is indented under subclass 280. Apparatus in which the mechanical device includes a pinion or toothed segment and a toothed bar, the teeth of which engage those of the pinion or segment so that the movable pressure surface may be made to move relative to the fixed abutment by the rotation of the pinion or toothed segment.
- SEE OR SEARCH CLASS:
408, Cutting by Use of Rotating Axially Moving Tool, subclass 66, 99 and 135 for drill presses having feeding mechanism of the rack and pinion type.
- 289** This subclass is indented under subclass 280. Apparatus in which the mechanical device includes an internally screw threaded member and an externally screw threaded shaft with the member extending around the shaft and the screw threads of the shaft and member interengaging, the pressure surface being made to

move relative to the fixed abutment by the relative rotation of the shaft and member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

230, for reciprocating platen presses having a central strain rod carrying the reaction to the compacting force, the rod usually being in the form of a screw threaded actuator.

SEE OR SEARCH CLASS:

83, Cutting, subclass 463, for cutting apparatus including a work clamp jaw actuated by self-locking drive means (e.g., screw), and, subclass 631, for a screw-actuated reciprocating tool.

147, Coopering, subclass 11, for machines which force hoops upon barrels by means of screw operated pressing or driving means.

269, Work Holders, subclasses 240+, for patents to a device with relatively movable jaws, actuated by screw-nut means, to grip work while being treated. See the class definition of Class 269, Lines With Other Classes, Relationship to Press Means, for the line with Class 100.

408, Cutting by Use of Rotating Axially Moving Tool, subclass 64, 100+ and 129+, for drill presses having screw and nut feeding mechanism.

290 This subclass is indented under subclass 289. Apparatus having plural pairs of internally screw threaded members and externally screw threaded shafts for moving the same movable pressure surface.

291 This subclass is indented under subclass 280. Apparatus in which the mechanical device includes either a body having a continuous surface of gradually increasing radius or a body of diverging opposed surfaces, movement of the movable pressure surface being caused by movement of the body transversely of the direction of compressing motion and between the pressure surface and a fixed abutment.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

263, for reciprocating platen presses in which the actuation of the platen is by

a camming movement and the camming surface is interrupted to allow quick release of the platen for return by rebound of the material or by a biasing means.

282, for reciprocating platen presses in which a shaft turned cam is used to actuate a pitman connected to the platen.

SEE OR SEARCH CLASS:

147, Coopering, subclass 8 for machines which force hoops upon barrels by means of a cam operated pressing or driving means.

292 This subclass is indented under subclass 291. Apparatus in which a member of continuously varying radius is moved between the pressure surface and a fixed abutment by swinging or rotating it relative to the abutment.

SEE OR SEARCH CLASS:

408, Cutting by Use of Rotating Axially Moving Tool, subclass 49, 50, 64, 100+, and 129+, for drill presses having cam driven feeding means.

293 This subclass is indented under subclass 280. Apparatus in which the mechanical device includes a lever mounted so the point about which it moves does not change position relative to the fixed abutment.

SEE OR SEARCH CLASS:

83, Cutting, subclass 604, 605+, 625, 630, and 633+, for a cutting tool actuated by toggle or fixed-axis lever, and appropriate subclasses referring in their titles to work clamps or work feed grippers, for clamp or gripper jaws variously actuated.

147, Coopering, subclass 10 for machines which force hoops upon barrels by means of lever or crank gearing operated driving means.

294 This subclass is indented under subclass 280. Apparatus in which the mechanical device includes more than one lever or insertable strut connected to move concurrently in opposite directions to move the same movable pressure surface.

295 This subclass is indented under the class definition. Apparatus having a pressure surface.

SEE OR SEARCH THIS CLASS, SUBCLASS:

116, for presses with drain means for the expressed liquids in which the drain is through or along a movable pressure surface of the piston or platen type.

SEE OR SEARCH CLASS:

12, Boot and Shoe Making, subclass 38, for dies and formers for shoe sole laying and leveling machines, and, subclasses 133+, for shoe making lasts.

38, Textiles: Ironing or Smoothing, subclasses 74+, for flat irons, and, subclasses 103+, for ironing boards.

65, Glass Manufacturing, subclasses 256+, for glass sheet rolling means coacting with a planar platen, and, subclasses 305+, for a glass press molding machine.

68, Textiles: Fluid Treating Apparatus, subclasses 129+, for structure of non-rotary squeezers, per se, that is the squeezing elements which cooperate with the bed.

72, Metal Deforming, subclasses 462+, for a metal shaping tool or die, per se, usable with the apparatus provided for in Class 72.

83, Cutting, appropriate subclasses, including in particular subclasses which refer to work clamping means, and, subclasses 531+, (clicker die press).

92, Expansible Chamber Devices, appropriate subclasses for a cylinder and piston type expansible chamber device, and, particularly subclasses 172+, for piston structure.

101, Printing, subclasses 368+, for printing members.

108, Horizontally Supported Planar Surfaces, appropriate subclasses for a horizontal planar surface.

241, Solid Material Comminution or Disintegration, particularly, subclass 169.2 and 195, for comminutors having a pressure surface.

269, Work Holders, subclasses 257+, for patents specific to the jaw features of a work holder.

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 394+, for a preform reshaping, resizing or vulcanizing means comprising coacting pressure surfaces, subclasses 406+, for opposed press members comprising a forming apparatus, and, subclasses 470+, for a shaping surface, per se; see the search notes thereunder.

296 This subclass is indented under subclass 295. Apparatus in which there are plural pressure surfaces for acting on opposite sides of material and such surfaces are joined together by a flexible means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

114, for plural presses of the stacked box or plate type having flexibly connected plates and also having drain means.

202, for plural presses of the stacked box or plate type having plates hinged to one another.

SEE OR SEARCH CLASS:

99, Foods and Beverages: Apparatus, subclasses 372+ for cooking means comprising opposed heated mold surfaces (e.g., waffle iron, etc.).

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 408 for opposed registering, coacting mold cavities; see the search notes thereunder.

297 This subclass is indented under subclass 295. Apparatus in which the pressure surface is an auxiliary member which is insertable between the material compacted and a solid pressing surface, the auxiliary member being permeable by liquids.

SEE OR SEARCH THIS CLASS, SUBCLASS:

113+, for auxiliary members in the form of plates which are interposed between increments of material to form a stack which is positioned between the plat-

- ens of a press, said plates having liquid draining means.
- 122+, for press structures including textile containing pressure surfaces.
- 298** This subclass is indented under the class definition. Apparatus for removing a covering of woven fabric from material which has been compressed within the covering.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 101, for apparatus for enfolding a cloth about the material compacted.
- SEE OR SEARCH CLASS:
- 53, Package Making, appropriate subclasses, for methods and apparatus for closing packages and portable receptacles, not elsewhere provided for, Class 53 being the generic and residual locus of patents relating to such subject matter.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 584 for delaminating devices, per se.
- 299** This subclass is indented under the class definition. Apparatus and not provided for in the preceding subclasses.
- (1) Note. Included in this subclass, among other things are pressing apparatus in which a rotating helical member packs material into a receptacle, the receptacle not being a portable receptacle, but an element of a press. For similar devices in which the receptacle is a portable receptacle, see search notes below.
- SEE OR SEARCH CLASS:
- 141, Fluent Material Handling, With Receiver or Receiver Coating Means, for devices in which the receptacle is a portable receptacle, and see the Note above.
- 366, Agitating, subclasses 79+, for a heavy plastic kneading or mixing mill comprising a through-pass screw conveyor.

300**Press for a brake lining:**

This subclass is indented under subclass 92. Apparatus specifically designed to apply a compressive force for the purpose of placing a portion of a member intended to frictionally engage a relatively moving member to reduce or terminate such relative movement (i.e., a brake pad) onto the structure intended to support that member (i.e., onto a brake shoe or brake assembly).

- (1) Note. Class 100 takes a brake press for a lining if it includes treating means of the type found in subclass 92. The class also includes a laminating press for a brake lining having heating, cooling, or drying means if the adhesive applying means is only nominally recited.

SEE OR SEARCH CLASS:

- 29, Metal Working, subclass 233 for an apparatus for (a) bringing a brake lining from a remote location into positional relationship with the brake shoe to which it is to be assembled, (b) stretching or bending a brake lining into position on a brake shoe, (c) holding a brake lining on a brake shoe to facilitate securement of the lining to the shoe, or (d) for applying a fastener to the previously assembled lining and shoe to secure the lining to the shoe, provided the device does not include means to subject the material compacted to additional treatment that includes means for changing the temperature or reducing the moisture content of the material compacted.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclasses 580+ for a device for adhesively bonding a brake lining to a brake shoe comprising a specialized laminating device and a press, and wherein the laminating feature of the device is more than nominally recited. For example a device found in subclasses 580+ includes a press having (a) a relieved or discontinuous surface for the purpose of joining laminae in a configured pattern or in a hit-miss manner or (b) a platen wherein a limited portion only of the press surface

area is heated so that a restricted portion only of the pressed area is joined, etc.

- 188, Brakes, for a device for retarding the motion of or for stopping a machine by friction, by positive engagement of elements, or by the internal resistance of a fluid or a field of force, especially subclasses 250+ for a brake shoe with or without a brake lining.

- 269, Work Holders, for the residual locus for a patent to a device which during a work treating operation contacts a workpiece for the purpose of (a) supporting the work against the force of gravity or (b) preventing movement of the work in a particular direction or in all directions while, as disclosed, such work is supported against the force of gravity or (c) providing a surface juxtaposed to the work for constraining the motion of a tool during its performance of such a work treating operation. However, the work holders of Class 269 do not include means to modify or treat the material engaged; this combination is found in Class 100, subclasses 92+.

301 **Electric heater:**

This subclass is indented under subclass 300. Apparatus including means to increase the temperature of the brake pad, brake shoe, brake assembly, or press and wherein the means to increase the temperature is provided through the conversion of electrical energy to thermal energy.

SEE OR SEARCH CLASS:

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclasses 580+ for a device for adhesively bonding a brake lining to a brake shoe comprising more than a mere press, in particular note indented subclasses 583.7 and 583.9 for a device that is heated electrically.
- 219, Electric Heating, for the generic class for electric heating devices, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heater iron, etc.) where no significant structural details of the press or article being pressed is

claimed; also see subclasses 600+ for inductive heating, subclasses 678+ for microwave heating, subclasses 764+ for capacitive dielectric heating, subclasses 50+ and 149+ for metal heating by electricity combined with shaping, where the shaping may be by means of dies, and subclasses 200+ for miscellaneous electric heaters.

302 **Plural diverse presses:**

This subclass is indented under subclass 92. Apparatus having at least two means for subjecting the material to compressive force which means are independent of each other, and at least one of which includes a pressing surface which differs in kind from those of at least one other.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 137+, for an apparatus having plural diverse presses without the heating, cooling, or drying means.

303 **In press material handling train:**

This subclass is indented under subclass 92. Apparatus including means to convey the material to the means for subjecting the material to compressive force, or means to remove the material from the means for subjecting the material to compressive force, wherein the heating, cooling, or drying means is so arranged as to act on the material during its movement to or from the means for subjecting the material to compressive force.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 74, for a press having means to introduce liquid or steam into contact with the material while it is moving to or through the press.
- 95+, for a press having means to cut, break, pierce, or comminute the material in a press material handling train.

304 **In feed train:**

This subclass is indented under subclass 303. Apparatus including means to convey the material to the means for subjecting the material to compressive force, and wherein the heating, cooling, or drying means is arranged to act on the material during its movement to the

means for subjecting the material to compressive force.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 74, for a press having means to introduce liquid or steam into contact with the material while it is moving to or through the press.
- 96+, for a press having means to cut, break, pierce, or comminute the material in the means for subjecting the material to compressive force material feed train.

305 In press:

This subclass is indented under subclass 92. Apparatus wherein the means for changing the temperature or reducing the moisture content is so arranged that the treatment occurs in the means for subjecting the material to compressive force or during the compacting operation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 38, for a method of pressing which includes subjecting the material to a change in temperature.
- 74, for a device for adding steam to the material in the means for subjecting the material to compressive force.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, subclass 70 for an apparatus for removing liquid from material in which there are two or more distinct means for removing the liquid by applying mechanical pressure to the solid material treated.
- 53, Package Making, subclass 388 for a press for maintaining package flaps or seams under pressure for a sufficient time to (a) effect bonding or (b) set or dry the cover material; or having means to apply or remove heat from the flaps or seams while held in the device.
- 62, Refrigeration, for an apparatus for removing heat from a substance by a

change of phase of the coolant (i.e., refrigerant) therein, especially subclass 341 for a device including a shaping press for making a congealed product.

- 65, Glass Manufacturing, subclass 319 for a glass press molding apparatus combined with apparatus heating or cooling means.
- 99, Foods and Beverages: Apparatus, subclasses 372+ for cooking apparatus having two imperforate movably connected heated plates or molds which confine and contact food material there between including a waffle iron or sandwich grill.
- 101, Printing, subclasses 3.1+ entitled "hot die" for an embossing or penetrating press in which there is means to heat a die performing a printing operation.
- 110, Furnaces, subclass 223 for an incinerator having a press.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, for heated presses combined with other laminating features; see especially subclasses 583.1+ for a heated press unique to laminating.
- 162, Paper Making and Fiber Liberation, for a paper making operation that may involve a pressing step; especially subclass 56 for a chemical process involving squeezing or compressing, subclasses 205+ for the subsequent pressure treatment of a formed web, subclasses 224+ for a process of treating an article by pressure, subclass 305 for the combination of a mold for forming a paper article combined with pressing means, and subclasses 358+ for a press combined with a felt.
- 219, Electric Heating, subclasses 600+ for inductive heating, subclasses 678+ for microwave heating, and subclasses 764+ for capacitive dielectric heating; subclasses 50+ and 149+ for metal heating by electricity, combined with shaping, where the shaping may be by means of a die; and subclasses 200+ for a miscellaneous electric heater.
- 249, Static Molds, subclass 78 for a static mold having electrical heating means as part thereof and subclass 79 for a static mold with means within the

- 366, mold body to confine a heat exchange medium.
Agitating, subclasses 79+, 156.1+, and 318+ for a screw-type conveyor or agitator and subclasses 144+ for heating and cooling means in an agitator.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 200+ for a mixing or kneading device upstream of a plastic or article former, especially subclass 208 wherein the kneading device is in the form of a helix.
- 432, Heating, for the residual class for apparatus for or related method generating of heat and its application to materials, where the heat generating means is more than nominally recited.
- 306 Endless conveyor-type press:**
This subclass is indented under subclass 305. Apparatus wherein the means to subject the material to a compressive force includes a pliable movable web or belt supported at its extremities by rollerlike members, against which the material is pressed during the movement of the material by the web or belt from one position to another.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
151+, for additional endless conveyor-type presses without heating, cooling or drying means.
- SEE OR SEARCH CLASS:
34, Drying and Gas or Vapor Contact With Solids, subclass 70 for an apparatus for removing liquid from material in which there are two or more distinct means for removing the liquid by applying mechanical pressure to the solid material treated.
- 162, Paper Making and Fiber Liberation, for a paper making operation that may involve a pressing step; especially subclass 56 for a chemical process involving squeezing or compressing, subclasses 205+ for the subsequent pressure treatment of a formed web, subclasses 224+ for a process of treating an article by pressure, subclass 305 for the combination of a mold for forming a paper article combined with pressing means, and subclasses 358.1+ for a press combined with a felt.
- 307 Plural endless conveyor presses:**
This subclass is indented under subclass 306. Apparatus wherein the means for subjecting the material to compressive force includes at least two traveling webs arranged in series or in parallel and acting on the material independently of each other.
- (1) Note. Only one of the two presses needs to have a temperature conditioning means.
- 308 Means to control temperature:**
This subclass is indented under subclass 306. Apparatus including means to modify the temperature at which the material is treated.
- SEE OR SEARCH CLASS:
219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.
- 309 Multiple temperature treating zones:**
This subclass is indented under subclass 306. Apparatus wherein more than one distinct temperature conditioning area is provided.
- SEE OR SEARCH CLASS:
219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., an electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.
- 310 Having cooling:**
This subclass is indented under subclass 309. Apparatus wherein at least one of the distinct temperature conditioning areas is designed to reduce the temperature of the material being treated.

SEE OR SEARCH CLASS:

62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.

311 Platen in thermal contact with endless conveyor:

This subclass is indented under subclass 306. Apparatus further including a temperature conditioned planar surface provided adjacent to the continuous web or belt to transfer heat either to or from the web or belt.

SEE OR SEARCH CLASS:

219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., an electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.

312 Having cooling:

This subclass is indented under subclass 311. Apparatus wherein the device includes means to reduce the thermal level of the web.

SEE OR SEARCH CLASS:

62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.

313 Drum in thermal contact with endless conveyor:

This subclass is indented under subclass 306. Apparatus including a temperature conditioned roller provided adjacent to the continuous web or belt to transfer heat from or to the web or belt.

SEE OR SEARCH CLASS:

219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., an electrically heater iron, etc.)

where no significant structural details of the press or article being pressed are claimed.

314 Having cooling:

This subclass is indented under subclass 313. Apparatus wherein the device includes means to transfer heat from the web or belt.

SEE OR SEARCH CLASS:

62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.

315 Reciprocating platen-type press:

This subclass is indented under subclass 305. Apparatus wherein the means for subjecting the material to compressive force includes a material contacting rigid planar surface and means to move the rigid planar surface towards and away from the material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

214+, for a reciprocating press without the heating, cooling, or drying means.
295, for a platen or pressure surface.
300+, for a platen press for a brake assembly.

SEE OR SEARCH CLASS:

62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.
99, Foods and Beverages: Apparatus, subclasses 372+ for cooking apparatus having two imperforate movably connected heated plates or mold which confine and contact food material there between including waffle irons and sandwich grills.
144, Woodworking, subclasses 256.1+ for a wood bending press, especially subclasses 256.3+ for a wood bending machine which includes a platen press and a heating device for drying the wood in its bent form.

- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 498 for a laminating device having cooling means and subclasses 580+ for a device for adhesively bonding comprising a specialized laminating press, especially subclasses 583.3 and 583.9+ for a platen press.
- 219, Electric Heating, the generic class for electric heating devices, especially subclasses 243+ for an electrical heating means combined with a nominal press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 200+ for a mixing or kneading device upstream of a plastic or article former, especially subclass 208 wherein the kneading device is in the form of a helix.
- 316 Piston and box type:**
This subclass is indented under subclass 315. Apparatus including a material enclosing housing, wherein the rigid planar surface is movable within the confines of a housing to compress the material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
240+, for a piston and box type press, per se.
- SEE OR SEARCH CLASS:
425, Plastic Article or Earthenware Shaping or Treating; Apparatus, subclasses 200+ for a mixing or kneading device upstream of a plastic or article former.
- 317 Heating or cooling element in box wall:**
This subclass is indented under subclass 316. Apparatus wherein the treating means includes means to heat or cool the material, wherein the means to heat or cool the material is located within the confines of the housing wall.
- SEE OR SEARCH CLASS:
62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.
- 219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a nominal press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.
- 366, Agitating, subclasses 144+ for an agitator having heating and cooling means, especially subclass 149 wherein the heating or cooling material is located in the housing wall.
- 318 Electric heater:**
This subclass is indented under subclass 317. Apparatus wherein the treating means includes means to raise the temperature of the material, wherein the means for increasing the temperature is provided through the conversion of electrical energy to thermal energy.
- SEE OR SEARCH CLASS:
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 498 for a laminating device having cooling means and subclasses 580+ for a device for adhesively bonding comprising a specialized press (i.e., a press that is not of general utility), especially subclasses 583.3 and 583.9+ for a platen press.
- 219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.
- 319 Means to control temperature:**
This subclass is indented under subclass 315. Apparatus including means to modify the temperature at which the material is treated.

SEE OR SEARCH CLASS:

219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed is claimed.

320

Electric heater:

This subclass is indented under subclass 315. Apparatus wherein the means for changing the temperature of the material includes means to increase the temperature and wherein the means for increasing the temperature is provided through the conversion of electrical energy to thermal energy.

SEE OR SEARCH THIS CLASS, SUBCLASS:

318, for an electric heater associated with a piston and box type press.

SEE OR SEARCH CLASS:

156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 498 for a laminating device having cooling means and subclasses 580+ for a device for adhesively bonding comprising a specialized laminating press (i.e., a press that is not of general utility), especially subclasses 583.3 and 583.9+ for a platen press.

219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.

321

Platen having particular thermally conductive feature:

This subclass is indented under subclass 315. Apparatus wherein the planar surface has at least one layer which is particular designed to enhance heat transfer between the material being pressed and the means for subjecting the material to compressive force surface.

322

Temperature modulating insert:

This subclass is indented under subclass 315. Apparatus wherein heat transfer occurs between a member that is not a pressure surface, but that is within the means for subjecting the material to compressive force apparatus, and the material being pressed (e.g., a separate heated platen from the pressure platen which provides heat transfer between the separate heated platen and either of the means for subjecting the material to compressive force platen or the material being pressed).

323

Press apparatus thermally insulated from heating/cooling means:

This subclass is indented under subclass 315. Apparatus wherein the means for subjecting the material to compressive force is specifically provided with means (e.g., radiating fins, insulated layer or platen, etc.) which minimizes the effect of the temperature change on the press apparatus.

324

Plural reciprocating platens:

This subclass is indented under subclass 315. Apparatus wherein more than one planar pressure surface is movable.

325

Heating or cooling element in platen:

This subclass is indented under subclass 324. Apparatus wherein the means for changing the temperature is provided within a platen, such that the platen is temperature conditioned internally.

SEE OR SEARCH CLASS:

62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.

219, Electric Heating, the generic class for electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.

326 Heating or cooling element in platen:

This subclass is indented under subclass 315. Apparatus wherein the means for changing the temperature is provided within a platen, such that the platen is temperature conditioned internally.

SEE OR SEARCH CLASS:

- 62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.
- 219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.

327 Roll-type press:

This subclass is indented under subclass 305. Apparatus wherein the means for subjecting the material to compressive force is a rotatable cylinder.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 155+, for a roll-type press without heating, cooling, or drying means.

SEE OR SEARCH CLASS:

- 34, Drying and Gas or Vapor Contact With Solids, subclasses 108+ for a dryer-type hollow drum or receptacle member through, over, by, or in which the material is carried to be treated and rotating about an axis.
- 156, Adhesive Bonding and Miscellaneous Chemical Manufacture, subclass 498 for a laminating device with cooling means and subclasses 580+ for a device for adhesively bonding an article comprising a specialized laminating press, especially subclass 555 for a laminating press having a continuous roller feed, subclass 582 for a rotary-type laminating press, and subclasses 583.1+ for a heated laminating press.

- 162, Paper Making and Fiber Liberation, for a paper making operation that may involve a pressing step; especially subclass 56 for a chemical process involving squeezing or compression, subclasses 205+ for the subsequent pressure treatment of a formed web, subclasses 224+ for a process of treating an article by pressure, subclass 305 for the combination of a mold for forming a paper article combined with pressing means, and subclasses 358.1+, 358.5, and 360.2 for a press and felt combination.

- 165, Heat Exchange, subclasses 89+ for a rotary drum-type heat exchanger.

- 219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.

- 366, Agitating, subclasses 79+, 156.1+, and 318+ for a screw-type conveyor or agitator and subclasses 144+ for heating and cooling means in an agitator.

- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 363 for a Class 425 roll-type press.

- 432, Heating, for the residual class for apparatus or related method for the generation of heat and its application to materials, where the heat generating means is more than nominally recited, especially subclass 60 and 228 for the above combined with a roll.

- 492, Roll or Roller, the generic class for cylindrical work contacting surfaces, especially subclass 46 for a roll having heat transfer means.

328 Electric heater:

This subclass is indented under subclass 327. Apparatus wherein the means for changing the temperature includes means to raise the temperature of the material and wherein the means for increasing the temperature is provided through the conversion of electrical energy to thermal energy.

SEE OR SEARCH CLASS:

219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heater iron, etc.) where no significant structural details of the press or article being pressed are claimed, especially subclasses 469+ wherein the device includes a cylinder or roll.

329 Means to independently heat or cool different sections of roll:

This subclass is indented under subclass 327. Apparatus wherein the means for changing the temperature is provided at multiple locations, such that one section of a pressure roll may be conditioned to a different temperature than another section of the same roll.

330 Roll surface has particular thermally conductive feature:

This subclass is indented under subclass 327. Apparatus wherein the cylinder surface has a layer or other feature particularly designed to enhance heat transfer between the material being pressed and the means for subjecting the material to compressive force surface.

331 Plural stage or pass:

This subclass is indented under subclass 327. Apparatus wherein more than one cylindrical pressure surface is temperature conditioned.

SEE OR SEARCH THIS CLASS, SUBCLASS:

161+, for a plural stage or pass roller-type press without temperature conditioning means.

332 Roll temperature conditioning means is external of roll, but in direct temperature conditioning contact with roll:

This subclass is indented under subclass 327. Apparatus wherein the means for changing the temperature is placed immediately adjacent to the cylindrical pressure surface.

- (1) Note. A roll press which is temperature conditioned within a heated or cooled container (e.g., an oven or cooler) is not considered direct temperature condition-

ing contact with the means for subjecting the material to compressive force roll.

333 Gas (e.g., steam):

This subclass is indented under subclass 332. Apparatus wherein heat transfer fluid is conveyed to the material in a vapor state.

334 Roll heated or cooled internally:

This subclass is indented under subclass 327. Apparatus wherein the means for changing the temperature is provided within a pressure roll.

SEE OR SEARCH CLASS:

62, Refrigeration, for an apparatus for removing heat from a substance by a change of phase of the coolant or refrigerant, especially subclass 341 for a device for making a congealed product having a shaping press.

219, Electric Heating, the generic class for an electric heating device, especially subclasses 243+ for an electrical heating means combined with a press (e.g., electrically heated iron, etc.) where no significant structural details of the press or article being pressed are claimed.

335 Temperature conditioning fluid flow passage in roll surface:

This subclass is indented under subclass 334. Apparatus wherein the means for changing the temperature includes a heated or cooled gas or liquid which is passed through a conduit in the outer wall of the means for subjecting the material to compressive force roll in order to provide heat transfer between the roll and the material being pressed.

336 Roll core has a temperature conditioning fluid flow passage:

This subclass is indented under subclass 334. Apparatus wherein the means for changing the temperature includes a heated or cooled gas or liquid which is passed through a conduit within the hollow center of the means for subjecting the material to compressive force roll in order to provide heat transfer between the roll and the material being pressed.

337 Helix-type press:

This subclass is indented under subclass 305. Apparatus wherein the means for subjecting the material to compressive force surface is a rotating member having a fin or fins extending spirally about and along the axis of rotation and the material is compressed by being forced by the forwarding movement through a constricted passage of cross section smaller than that of the uncompressed material.

SEE OR SEARCH THIS CLASS, SUBCLASS:

145, for a helix-type press, per se.

SEE OR SEARCH CLASS:

165, Heat Exchange, subclass 87 for a screw-type heat exchanger.

222, Dispensing, subclasses 236+ for helical rotary dispenser.

366, Agitating, subclasses 79+, 156.1+, and 318+ for a screw-type conveyor or agitator and subclasses 144+ for heating and cooling means in an agitator.

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 200+ for a mixing or kneading device upstream of a plastic or article former, especially subclass 208 wherein the kneading device is in the form of a helix.

432, Heating, for the residual class for apparatus or a related method for the generation of heat and its application to material, where the heat generating means is more than nominally recited.

338 Plural helices:

This subclass is indented under subclass 337. Apparatus including at least two helical-type presses.

SEE OR SEARCH CLASS:

366, Agitating, subclasses 83+ and 156.2 for an agitator having plural screws.

339 Temperature conditioning means in chamber wall or jacket:

This subclass is indented under subclass 337. Apparatus including an outer housing, wherein the means for changing the temperature is provided within the outer housing.

SEE OR SEARCH CLASS:

366, Agitating, subclass 149 for a heating or cooling fluid in a stirrer jacket.

340 Temperature conditioning means within helix:

This subclass is indented under subclass 337. Apparatus including a hollow center, wherein the means for changing the temperature is provided within the hollow center.

SEE OR SEARCH CLASS:

366, Agitating, subclass 147 for a heating or cooling element in a stirrer.

341 SAFETY DEVICE:

Apparatus including means to obstruct, limit or prevent either access to or the operation of part of the press when such activity would (A) endanger a person or (B) damage some part of the press.

SEE OR SEARCH THIS CLASS, SUBCLASS:

52, for a press having means to automatically sense the pressure on the material and reverse the direction of the platen when a predetermined pressure is achieved.

99, for a press having 1) means to detect some condition in the operation of the machine, the detecting means operating a visual and/or audible indication of the condition, or 2) means to indicate or test a physical or chemical condition of the material under treatment.

192, for a plunger and casing type press in which the walls of the casing are held in place by a limited but continuing force so that the size of the outlet opening may vary with the amount of material forced therethrough (e.g., overload relief).

SEE OR SEARCH CLASS:

53, Package Making, subclass 77, for an apparatus for encompassing, encasing or completely surrounding goods or materials with a cover made from sheet material stock having interrelated or safety control.

- 72, Metal Deforming, subclass 4 for a metal working device having means to sense abnormalities in the work, in the delivery of the work or an exhaustion in the supply of work.
- 83, Cutting, subclasses 58 through 68 for a cutting device provided with means capable of bringing any or all of the moving parts of the device to a halt, such means acting to accomplish its halting effect in response to a signal or impulse which cannot be predicted to occur during any particular one of a number of recurring cycles of operation (either of the machine as a whole, of the tool, or of any part of the machine which has a cyclic law of operation). Also, search Dig 1 for a digest collection of safety devices associated with a cutting device.
- 192, Clutches and Power-Stop Control, subclasses 116.5 through 150 for mechanisms usually automatic in operation for stopping a machine when a predetermined result is reached, when some part of the machine fails to function, when the material fails or is disarranged, or when an operator's position renders him liable to injury, especially subclasses 129-137 for a safety stop mechanism which operates to interrupt the drive, render the starting mechanism inoperative, or otherwise prevent operation of the machine.
- 269, Work Holders, subclass 23 for a pneumatic work holder having means operable to (A) cease the continued application of fluid pressure, (B) cease jaw* movement, (C) insert blocking means between opposed jaws, or (D) any combination of (A), (B), and/or (C); such means may be dormant, movable or activated by a condition (Such as the absence of a workpiece in the work holder) to prevent injury to a worker, and/or to avoid damage to the material being treated or the work holder itself.
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 151 through 154 for a plastic article or earthenware shaping or treating device including means adapted to stop, prevent, or modify the operation of a machine, or relieve a condition when an unguarded, abnormal or unsafe situation which would injure the operator or the machine occurs.
- 342 Means to disable or to forestall power to the press:**
This subclass is indented under 341. Apparatus wherein the means to obstruct, limit or prevent operation of part of the press includes either (A) means to halt the press at the indication of a hazardous condition or (B) means to prevent the initial operation of the press at the indication of a hazardous condition.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
48 through 52, for a press having automatic control of the actuating means.
256, for a press in which a pressure surface, as it moves to a predetermined position, triggers the control of the pressure surface moving means to cause the said means to stop moving the surface or to cause movement of the surface in the opposite direction.
- 343 Multiple triggers to start:**
This subclass is indented under 342. Apparatus wherein the means to prevent initial operation of the press includes at least two independent condition input devices.
- (1) Note: One of the condition input devices cannot be the power on switch.
- (2) Note: An example of two independent condition input devices includes a sensor on the door and a sensor to detect a vessel, or two sensors which detect the proper alignment of a receiver, or a pressure sensor and a temperature sensor, etc.
- SEE OR SEARCH CLASS:
72, Metal Deforming, subclass 21.1 for a metal deforming tool having plural sensors.
192, Clutches and Power Stop Control, subclass 131 for a safety mechanism requiring the use of two appendages (i.e., hand and foot operated).

344 Requires the use of both hands:

This subclass is indented under 343. Apparatus wherein the two condition input devices are located outside of the compressive force region of the press and are spaced apart to such a degree as to require an operator to use both hands to actuate them.

345 Associated with door or cover:

Apparatus under 342 including a door or cover shielding the compressive force region of the press and wherein the means to obstruct, limit or prevent operation of part of the press includes a sensor associated with a door or cover of the press.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, subclasses 61.62 through 61.68 for a circuit makers and breakers whose circuit-controlling operation is brought about by the movement of a closure member.

346 Overload protection:

This subclass is indented under 342. Apparatus including means to detect an excessive force on the press and discontinue the pressing operation when the excessive force is detected.

(1) Note: Included in this subclass is a sensor which detects an overload caused by an obstruction in the press and stops the machine, or a pressure sensor in a pneumatic line which detects an overload and stops the operation of the machine.

(2) Note: Not included in this subclass is a pressure sensor which detects a maximum pressure value and reverses the press as a part of the normal press cycle.

SEE OR SEARCH THIS CLASS, SUBCLASS:

52, for a press in which the means sensitive to the pressure on the material causes the actuating means to reverse the direction of movement of the movable platen upon the achievement of a predetermined pressure in the material.

SEE OR SEARCH CLASS:

72, Metal Deforming, subclasses 431 through 434 for a metal deforming device having a connection between the drive train and the movable tool which is yieldable.
83, Cutting, subclass 397.1 and 543 for a cutting device having a transmission which is yieldable on overload.
192, Clutches and Power-Stop Control, subclass 150 for an overload release.
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 154 for a safety device which is actuated in response to the presence of foreign matter or an overload.

347 Hydraulic or pneumatic safety system:

Apparatus under 342 including a fluid or gaseous pressure system and wherein the fluid or gaseous pressure system includes means to divert the fluid or gas to deactivate the press when a hazardous condition is detected.

(1) Note: This subclass includes a valve that responds to a sensor detecting a hand in the path of the press and stops the downward stroke by diverting pressurized fluid.

SEE OR SEARCH THIS CLASS, SUBCLASS:

269.14, for a reciprocating press having a fluid supply system and subclass 269.16 for a reciprocating press having a particular type of valve associated with the fluid supply system.

SEE OR SEARCH CLASS:

192, Clutches and Power-Stop Control, subclass 129 for a mechanical stop mechanism.

348 Optical condition sensor:

This subclass is indented under 342. Apparatus wherein the means to obstruct, limit or prevent operation of the of part of the press includes a light transmitter and light receiver .

SEE OR SEARCH CLASS:

72, Metal Deforming, subclass 21.3 for a tool sensor which stops the machine based on the position of the tools.

349 Barrier type (e.g. guard, shield, screen, hood, etc.):

This subclass is indented under 341. Apparatus wherein the means to obstruct, limit or prevent either access to or the operation of part of the press includes an attachment or covering placed on the press for the purpose of preventing injury to the operator or machine by providing a physical obstacle which bars movement of the press or movement of the operator towards the compressive region of the press.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

345, for a safety device associated with the door of the press.

SEE OR SEARCH CLASS:

68, Textiles: Fluid Treating Apparatus, subclasses 264 through 268 for a guard, guide, or feed in a fluid treating device.

74, Machine Element or Mechanism, subclasses 608 through 609 for a machine guard not otherwise classified and for which no subclass is provided in the art classes. and subclasses 612-617 for guard mechanisms not otherwise classified and for which no subclass is provided in the art classes.

192, Clutches and Power-Stop Control, subclasses 133+ for an automatic safety guard and especially subclass 134 for an automatic safety guard for a punch-type press where the press is nominally recited.

350 Blocking mechanism between press surfaces:

This subclass is indented under 349. Apparatus wherein the attachment or covering which obstructs, limits or prevents either access to or operation of the press is an obstruction located in the path of the pressing surface which is designed to impede, bar or stop the movement of the press.

(1) Note: The subclass includes for example a block or blocks placed in the path of the platen to obstruct its movement during servicing of the press.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

918, for a bolster and die(s) and means to removably attach the latter to the former.

351 Convoluted or elongated feed chute:

This subclass is indented under 349. Apparatus wherein the attachment or covering which obstructs, limits or prevents either access to or the operation of the press includes a passageway or channel through which the material must pass and wherein the passageway or channel has a serpentine shape or has an extended length which prevents the hand or arm of the operator from reaching the compressive force region of the press.

352 Debris shield attached to moving press member:

This subclass is indented under 349. Apparatus wherein the attachment or covering which obstructs, limits or prevents either access to or the operation of the press includes a guard attached to the moving press member to prevent the escape of debris from the compressive force region of the press.

SEE OR SEARCH CLASS:

83, Cutting, subclass 397 for a cutting device having a debris shield.

353 INTERRELATED:

Apparatus in which two or more portions of the apparatus having distinct functions each have the regulating elements therefor so arranged as to require one element to assume a desired position simultaneously or in proper sequence with the positioning of another portion, whereby the operation of one portion is directly dependent upon the correct positioning of the regulating element of another portion.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

45, for a press having automatic or material triggered control of the material feeder or discharger.

97, for a press having means to cut, break, pierce, or comminute the material in the feed train.

102, for a press combined with means which performs a function other than

- pressing the material as defined in the class definition.
- 215 through 217 , for a reciprocating press having means to convey the material to the pressing zone.
- 221 through 225 , for a reciprocating press having multiple material supports and wherein the press or the supports are shiftable.

SEE OR SEARCH CLASS:

- 53, Package Making, subclass 77, for package making apparatus with inter-related or safety controls.
- 72, Metal Deforming, subclass 421 for a metal deforming tool with means to interrelated the tool and work pieces movement.
- 192, Clutches and Power-Stop Control, subclasses 116.5 through 150 , for mechanisms usually automatic in operation for stopping a machine when a predetermined result is reached, when some part of the machine fails to function, when the material fails or is disarranged, or when an operator's position renders him liable to injury. This subclass takes the subcombinations, per se.

CROSS-REFERENCE ART COLLECTIONS

The following subclasses comprise collections of cross-reference copies of patents pertaining to various specified aspects of the pressing art, the original copies of which are classified in the subclasses above or elsewhere. Nonpatent disclosures may also be found in these subclasses. Disclosures are placed in these subclasses for their value as references and as leads to appropriate main or secondary fields of search without regard to their original classification or their claimed subject matter. The disclosures found in the following subclasses are examples, only, of the indicated subject matter, and in no instance do they represent the entire extent of the prior art.

- 901 SCRAP AUTO BODY CRUSHERS:**
Subject matter pertaining to the compressing of scrap automobile bodies to form bales.
- 902 CAN CRUSHERS:**
Subject matter pertaining to the crushing of empty cans between rollers or reciprocating platens.

- 903 PELLETERS:**
Subject matter pertaining to the compressing of material into pellet form.
- 904 Screw:**
This subclass is indented under subclass 903. Subject matter using a screw device to make pellets.
- 905 Inner roll:**
This subclass is indented under subclass 903. Subject matter using an inner roll within a perforated drum to form pellets.
- 906 Reciprocating:**
This subclass is indented under subclass 903. Subject matter using a reciprocating ram to form pellets.
- 907 Rotary:**
This subclass is indented under subclass 903. Subject matter using two rotary bodies to form pellets.
- 908 Series rolls:**
This subclass is indented under subclass 903. Subject matter using a series of rolls to form pellets.
- 909 Adjustable die openings:**
This subclass is indented under subclass 903. Subject matter using apparatus having adjustable die openings to form pellets.
- 910 MEAT:**
Subject matter pertaining to the compressing of meat.
- 911 JET OR EXPLOSIVE:**
Subject matter pertaining to the use of an explosive or jet device as a power source for reciprocating type presses.
- 912 BINDER CONTAINERS:**
Subject matter comprising twine binder containers used with hay balers.
- 913 TRUSS PRESSES:**
Subject matter comprising pressing devices for forming wooden roof trusses.

- 914 SCRAP PAPER:**
Subject matter pertaining to the compressing of scrap paper to form bales.
- 915 FIXED UPPER RAM, LOWER MOVABLE RECEPTACLE:**
Subject matter comprising reciprocating presses which have a fixed upper ram and a lower movable receptacle.
- 916 COIL TIGHTENER AND BINDER:**
Subject matter comprising apparatus for tightening coils of metal and then strapping the coils.
- 917 MAGNETIC:**
Subject matter pertaining to the use of magnetic devices as a pressure source in roller or reciprocating platen presses.
- 918 BOLSTER AND DIE:**
Subject matter comprising presses which include bolster and dies and means to removably attach the latter to the former.

FOREIGN ART COLLECTIONS

The foreign patents/nonpatent literature from Class 100, subclass 93, has been transferred directly to the foreign art collection below (subclass FOR 100) which is intended only as a repository for foreign patents/nonpatent literature. The Class 100 reference in parentheses following the subclass title below provides the source of the respective foreign patents/nonpatent literature. The definition below corresponds to the respective Class 100 definition.

FOR 100 In press: (100/93)

Foreign art collection including apparatus in which the means for changing the temperature or reducing the moisture content is so arranged that the treatment occurs in the press or during the compacting operation.

END